

MICHIGAN FARMER

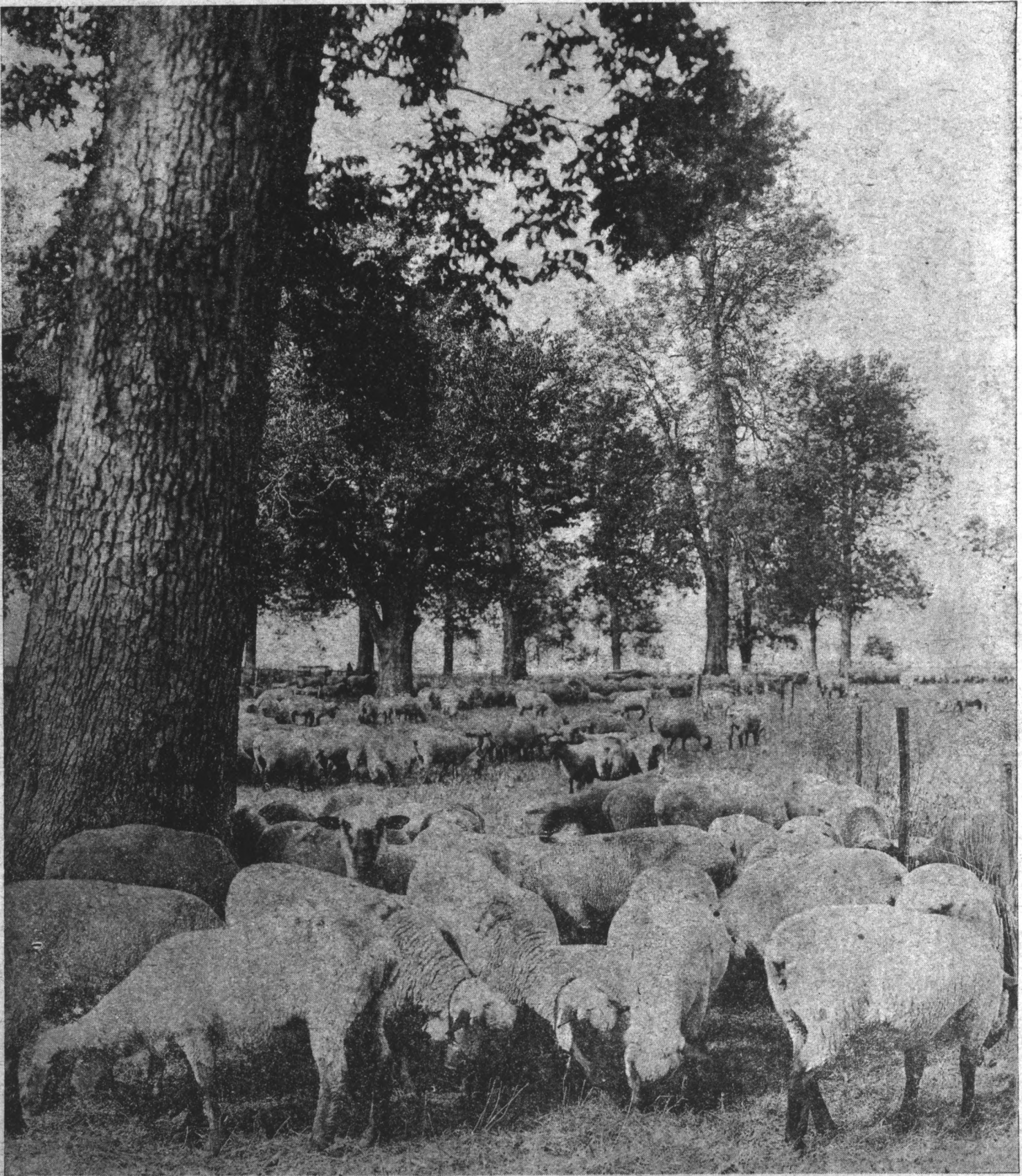
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Things We Like To Talk About

We like to call attention to the fact that the Samson is so simple that the tool kit contains three box wrenches—and nothing else.

We like to talk about the safety of the Samson—safety absolutely assured by a uniform distribution of weight.

We like to call attention to the fact that you can throw away your oil can—that you don't need it with the Samson, because the oil is applied at only two points, and distributed from these points to all moving parts.

We like to talk about the fact that the Samson (Model M) will pull two 14-inch plows at all times—and three 14-inch plows under favorable conditions.

We like to talk about the fact that all moving parts on the Samson are enclosed and self-oiling, waterproof and dustproof. No moving parts exposed except the four wheels.

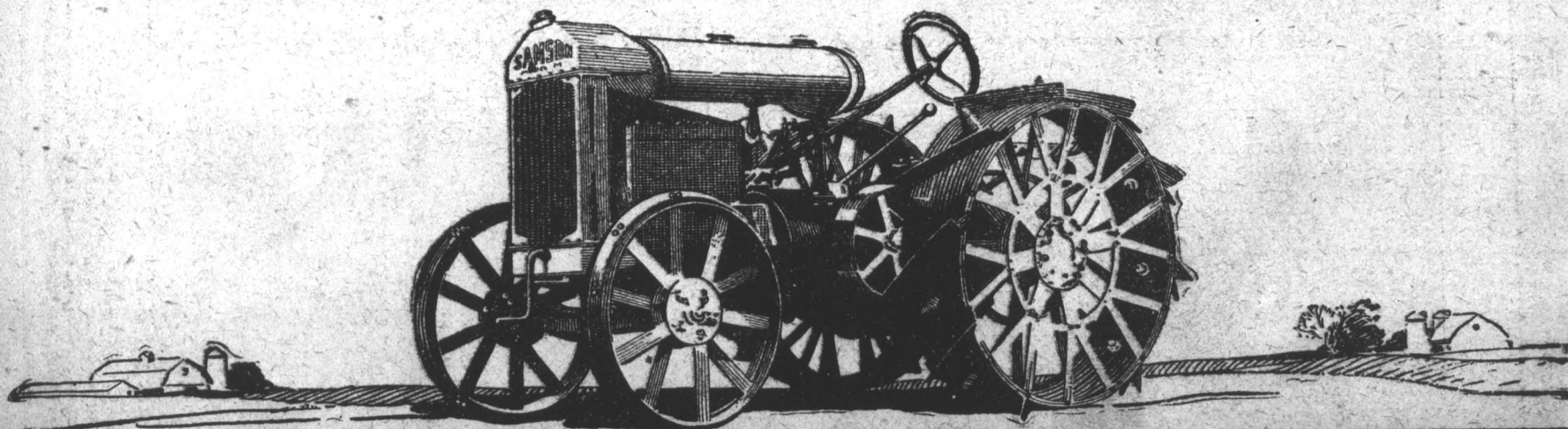
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SAMSON *MODEL M* \$650

*Capable of pulling two 14-inch plows at all times;
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Is Yours a Standard School?

AS we older farmers occasionally get together in various neighborhood gatherings, farmers' clubs and grange meetings, we sometimes talk over the days when we went to the old district school. And frequently an old farmer declares the country schools are not as good as they used to be. Sometimes there is considerable truth in the claim, depending on the location and progressiveness of the school district under consideration.

During these days in the majority of district schools in southern Michigan there is a decided improvement in the equipment and methods of teaching. Many of the houses were built years ago and have deteriorated more or less, unless the school board has taken interest enough to keep them in good repair and well painted, inside and out. But we have visited several schools in Calhoun and other counties wherein the interiors of old-time structures were a revelation to the visitor, largely due to the interest and ability of the teacher. Such schools we found well furnished with modern seats, desks, blackboards, globes, charts, dictionaries, book cases well filled with good literature, framed pictures on the walls, organs, phonographs, etc. The walls and ceilings were painted and papered, good heating stoves or furnaces provided and windows all well screened with shades and curtains.

A good teacher is a treasure in a good district school, provided the school board and patrons become aware of the fact in time to appreciate and retain such a teacher for several terms, and even years of service. Sooner or later there will be some doings in such a country school house and the folks thereabouts will eventually hear about it. If the patrons take enough interest and join the teacher and pupils in keeping the "doings" going from one week end to another, in time, and as sure as fate, that district will have a porcelain enamel plate tacked up over the front door proclaiming to the passer-by that it is a "Standard School."

The accompanying picture is an instance. There are but three "Standard" rural schools in Calhoun county. This school is about three miles north of Battle Creek and has been taught by Miss Pearl L. Ford for the last four years. And she is all that the term implies. After she had been teaching, not keeping school, for a spell, things began to happen; and they kept on

In Many Districts the Patrons are not Aware of the Standing of Their Local School, Not So Here. --- J. H. Brown



Five "Old Boys" Visit their Old District School.

happening until the culmination was the tacking up over the front door of the sign that proclaimed to all the world that "we did it!" and now "we've got it!" We took this picture just after the celebration of the achievement one pleasant day. A program had followed a fine dinner served in a farm house near by. Then we all stepped outside and watched the school director, W. S. Fruin, put up the plate. The picture shows the teacher, officers, pupils and patrons with bright and happy faces, posed on the front steps.

The next view is of one corner of the school room during the noon hour. Warm lunches are served during the cold weather of winter and this plan has been very successful. The teacher and school board purchased a complete equipment of large oil stove, oven, cooking utensils, knives, forks, plates, spoons, cups, etc. Everything is first-class and complete in detail. There is room provided for keeping all this equipment and it is cared for by the pupils with great pride and satisfaction. The picture shows lunch warmed and ready to serve on the self-serve plan.

The girls enjoy this innovation and they are taking up many fine ideas in

the way of becoming more or less expert in domestic science. The day we visited the school we found everything scrupulously neat and clean and everything in its proper place.

This school house is not new by any means, but it looks fine inside the school room. The walls and windows are decorated and screened, the desks and seats shine from being kept clean and polished. Patriotism is sticking out on all the walls and is expressed in the feelings of the pupils. Sanitation is vigilantly maintained. There are individual drinking cups and paper towels, and frequent talks on detailed methods of maintaining good health and cleanliness. The very neat and clean appearance of the pupils proves that they practice what is preached to them, and the habit has become second nature.

The third picture is a study; and there are hundreds of farmers and their wives, well along on the shady side of life, who will look at it with a personal interest and exclaim, "I've been there," and "Now, don't that look natural?"

One day a newspaper man and a state senator asked the writer to accompany them for a visit to their old

country school house where they went to school long before the Civil War. When we reached the old building we found five old boys of about the same age who had gathered to have their pictures taken. Their idea was to pose in a sort of stiff position that would show all the dignity they had acquired in the long years since they used to cut up tricks on the teacher and each other. They wanted to stand up in a row beside the old brick wall and have a picture that would show them together at the old district school once more.

But we made an entirely different proposition to them, and they bit at the bait immediately. So we placed them in the position shown at the entrance of the old entry door right where they used to sit and play. For ten minutes or more we tried to get these old boys to act natural. The senator sitting in the chair tried to brush off his coat lapels and sleeves a dozen times and smooth out the hairs in his beard. The bald-headed man at the right wanted to keep his hat on, we suppose because his head looked different from what it did when he came to school swinging his tin dinner pail nearly sixty years ago.

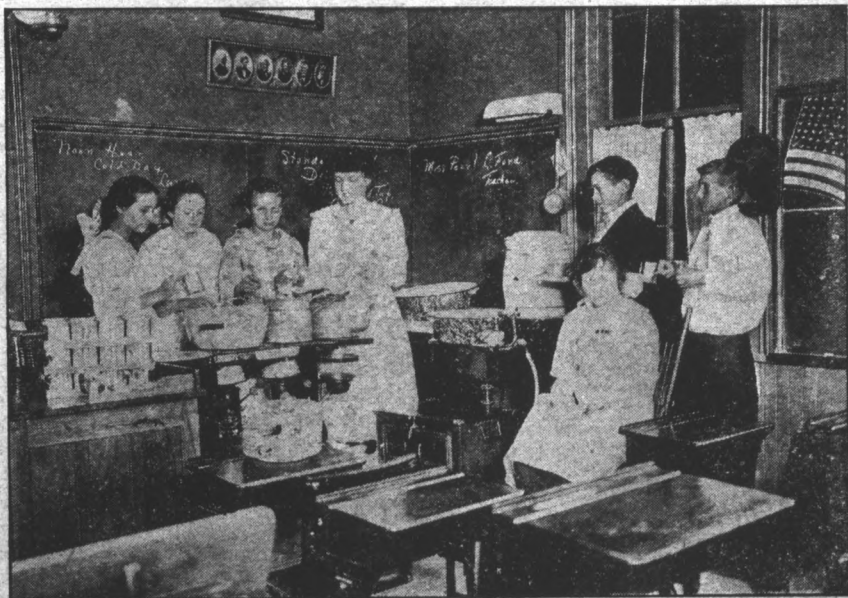
Finally we told the boys that we would not take the picture until they had told some stories to each other, and then we gave the senator a jack knife and pine stick to whittle. Suddenly we told them it was all over and they were surprised to find they had been "took" unawares. They wanted us to take another, for fear the first one would not be good. When we had finished up the picture they were so "tickled" over it they wanted a dozen or more apiece.

Later on we found that the senator was telling a snake story when we snapped the shutter. The newspaper man sitting in the entry way had helped the senator carry the snake right through those doors and they frightened the teacher nearly to death. And we may be sure those boys had to call it a day when that job was done and the teacher got through with them.

Such a picture as this has more life to it than posing in a dignified row "up agin' a brick wall." Those old-time boys greatly treasured that picture. Three of them have since died. The scene is one that will bring thoughts of old school days to many of the readers of the Michigan Farmer.



Celebrating the Winning of a "Standard School" Doorplate.



Interior of "Standard School"—Serving a Hot Lunch.

The Michigan Farmer

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CURRENT COMMENT

America's First Citizen

COLONEL ROOSEVELT, whose sudden death startled the nation on Monday last, well earned the great distinction of being remembered as America's first citizen. Colonel Roosevelt was so well known and the important phases of his career so familiar to the average American as to make a biographical review of



his life superfluous. In addition to being properly designated as America's First Citizen, Colonel Roosevelt enjoyed a world-wide fame attained by few men. As soldier, statesman, writer, traveler, explorer, hunter and fighter,

he enjoyed a high degree of public favor and earned for himself a just and lasting fame. His rugged and vigorous personality which won for him a larger personal following in the United States than was ever attained by any other citizen, also earned him many bitter and powerful enemies, but his vigorous Americanism ever prevailed to maintain his position as America's First Citizen in the great heart of the American people. Of the host of good things which might be said of Colonel Roosevelt and his accomplishments in public life, perhaps the greatest is an acknowledgment of his influence in arousing the great public conscience of America, through his efforts as the exponent of a square deal. It is but fitting tribute to Ex-President Roosevelt to say that because of the influence of his life our public and private ideals have been raised to a higher plane; our politics made cleaner; our business more honest, and our lives as citizens more purposeful.

Policing the State

IN another column of this issue, page 44, will be found what may prove a well-founded protest against the perpetuation of the state constabulary. There is no doubt at all that the cost of maintaining this small force of mounted police is high. It is said that the plans were first made for a much larger force than was established, and that part of the equipment for a larger force was purchased, but that when the members of the state War Preparedness Board figured on the cost of maintenance the original plans were severely pruned. To the end that our readers may be fully informed on all phases of this proposition, we have asked the auditor general for a statement of the cost of maintaining the state constabulary and his reply will be published at an early date.

In a recent issue we commented on the activities of this state police force during the past year. This review of their activities showed their principal usefulness to have been in the apprehension of draft evaders and of liquor runners at the state line. They also did patrol duty at the docks, elevators and warehouses for the protection of war materials and food stuffs.

The first and last mentioned of these activities were wholly related to the war and are no longer necessary. The enforcement of the prohibition law is still a proposition to be considered, but with Ohio going into the dry column and national prohibition coming next July, until demobilization of our troops has been completed, the usefulness of the state constabulary in this direction will scarcely be as great after that date as it has been in the past.

There remains to be considered the possible usefulness of such a force in case of strikes or other internal troubles of a similar nature. The other activities of these state police are of less importance and could be largely accomplished by local peace officers.

A thorough investigation and study of this proposition is most opportune at the present time, and we shall be glad to present all obtainable facts regarding it to our readers at the earliest possible date.

The Milk Commission Findings

DAIRYMEN in the Detroit area, who are contributing to the city's milk supply, may be disappointed at the prices fixed for the next two months, which are less than the December price, notwithstanding the increased cost of feeds. But in making these present prices the commission has provided for later compensation, as well as for the establishment of a principle which its experience has indicated as just, i. e., that milk prices should be higher during the summer months of short produc-

tion when consumption is highest, and when prices as heretofore established by custom have never been compensatory to producers.

In thus serving notice as to its future policy the milk commission is giving producers an opportunity to provide for higher production during the spring and summer months, when producers will be compensated for the necessity of lowering prices at the present time to preserve a market by inducing maximum consumption during the period of high production, and thus avoid the perplexing problem of a large surplus. This establishment of a definite plan of future action will give dairymen contributing to the Detroit supply an opportunity to make effective plans for the maintenance of a good flow of milk throughout the summer, especially by the sowing of soil-ing crops which will insure a supply of succulent forage, against the failure of pastures from midsummer drought.

In his message to the dairymen in the Detroit area, published in another column of this issue, Field Secretary Reed, of the Milk Producers' Association, has well said that the establishment of the principle of a compensatory market is of greater importance than the present maintenance of a compensatory price, and the serving of notice by the commission that the producers will be later compensated for the present need of moderate price reduction is a definite establishment of that principle.

Keep the Best Live Stock

THE feed problem is a serious one for many Michigan farmers this year. With some its only solution seems to be a reduction of flocks and herds. When this is necessary it is a serious mistake to sell the best individuals simply because they are the most salable and will bring the most money. There has never been a better future prospect for the live stock business in this state. The farmer who has good foundation stock for future production in any line has a most valuable asset, for the reason that prices for live stock and live stock products are certain to maintain a high level for a much longer period than prices for grain feeds. Keep the best of your live stock and be prepared to reap a profit from this condition.

The Food Production Problem

ORGANIZATION of relief work in the liberated sections of war stricken Europe is revealing a situation which seems to indicate that the world's food production problem will not be immediately solved by the ending of the war. Reserve stocks of wheat in India have not proven to be as large as had been supposed, while a portion of the Australian supply has been injured by the weevil and rendered unfit for human food. The need for food to relieve present conditions in Europe is being emphasized as conditions in the liberated sections are analyzed, with a resulting stiffening of our coarse grain market. There is also increasing evidence that there will be a larger export demand for our live stock, particularly dairy cows and horses, than the more conservative students of the situation believed, while a continued large demand for our live stock products, particularly fats, is assured.

The logical conclusion is that the world demand for food will continue to be so great as to make maximum food production as profitable at least as it has been during the past year, and with government restrictions removed and control measures relaxed perhaps even more profitable. This being conceded, the labor problem again becomes the farmer's most pressing problem, and the one most difficult of solution. With the demobilization of the boys in camp and of many returned

soldiers from France, the situation should be much better than was anticipated before the armistice was declared, but there will still be a shortage of available farm labor and still need for the employment of boys and for the distribution of farm labor which may be available in cities during the transition period to a peace basis. There will also continue the need for the increased utilization of labor-saving equipment on every farm. This should be provided for on a community cooperative basis where beyond the reach of the individual farmer, and it is not too early for neighborhood planning to this desirable end. The coming year will be a big year for American agriculture, and the progressive farmers who best plan to avail themselves of the opportunity for a profitable season will reap the largest dividends.

A Farmer Who Can Help

WE have learned with pleasure of the action of the Michigan senate in choosing Hon. Charles B. Scully, of Lapeer county, as president pro tem of that body. This is a just tribute to a worthy man. This is Mr. Scully's second term as senator and he previously served in the other branch of the legislature. Mr. Scully is one of our young, progressive farmers who needs no introduction to Michigan Farmer readers. He has just served two terms as president of the State Association of Farmers' Clubs where he did splendid work for organized agriculture.

There is generally no lack of wholesome and effective farmer influence in the lower house of the Michigan legislature, but there has too often been a lack of it in the state senate. With well known farmers as president and president pro tem of that body, legislation of interest to farmers is certain to receive proper and effective attention and explanation, which is a long step toward its proper and just consideration.

News of the Week

Wednesday, January 1.

PRESIDENT WILSON reaffirms his stand for the freedom of the seas and against the principle of the balance of power among nations.—The new German government announces its advocacy of the international abolition of compulsory military service.—Reports from London claim that German submarines surrendered to the Allies are being divided among the Allied nations.—The United States transport Northern Pacific with 2,500 American soldiers aboard, goes aground at Fire Island off New York Harbor.—Three men were killed and forty-five injured when a troop train was derailed near Edmonton, Quebec.

Thursday, January 2.

AMERICAN troops defeat Bolshevik forces along the Onega river in northern Russia, capturing Kadish and more than a dozen villages. These troops are now assured good winter quarters.—British steam yacht *Iolaire* is wrecked on the Scotland shore and 300 sailors drowned.—President Wilson leaves Paris for Rome.—The American army of occupation receives forty airplanes and 2,500 guns from the Germans.—Michigan legislature ratifies the national prohibition amendment, she being the sixteenth state to cast her ballot in favor of a dry nation.—Oakland county's sheriff is now being paid on a salary basis.

Friday, January 3.

TWO thousand French soldiers enter Budapest, the Hungarian capital.—It is announced that President Wilson, and Premiers Lloyd George and Clemenceau, have agreed on the creation of a new German confederation under the leadership of Bavaria and to include Posen, Siberia, Silesia and the Rhine provinces.—Senator Connolly, of Spring Lake, introduces a resolution in the Michigan legislature proposing a constitutional amendment giving the legislature authority to vote bonds for road building up to \$50,000,000.—Governor Sleeper in his message urges the adoption of the budget system for this state.

(Continued on page 71).

Orchard Soils and Fertilizers

By— U. P. Hedrick

AGRICULTURE is a "no-man's land" for the sciences. Botanists, entomologists, chemists, bacteriologists, soil-physicists and plant breeders, join in solving its problems. First one science and then another lets in light and illuminates some obscure nook in plant growing. Sometimes the discoveries proclaimed turn out to be theories made wonderfully charming by the rouge of speculation; at other times it seems that it is controversy and controversy alone that quickens the pulse of the investigator; not infrequently the offering of science is an old garment made over in a new and a wonderful style. But in spite of these defects and of such others as slowness, uncertainty, discoveries heralded that never put in appearance and the great display of small truths much adorned, the sciences are, stage by stage, creating a new agriculture.

There has been and is a very distinct ebb and flow in the activities of the several sciences having to do with the cultivation of the soil. Thus systematic botany, in the classification of fruits, began the construction of rational horticulture; then came chemistry to furnish knowledge of soils and fertilizers; then botany again and entomology, to offer aid in combating innumerable pests and these two branches of learning now loom largest. When, however, a discovery is made in any science, men are drawn to it as moths to a light and we may feel sure that botany and entomology are giving way in horticulture to the sciences having to do with plant-breeding and with soils and soil fertility since in these fields discovery and activity now are seemingly greatest.

As we are hearing much and in anticipation that we shall hear more in the next few years about the fertility of the soil, and, to lead up to the subject before you, let us follow this ebb and flow of phases of soil investigations.

The first comprehensive theory proclaimed by science regarding soil fertility came from Liebig, the great German chemist, who held that since plants absorb salts of potassium, phosphorus, nitrogen and other elements from the soil, fertility depends upon the quantity of these several plant foods in the soil. A natural inference was that the chemical composition of the crop affords the necessary guide to fertilizing. This theory, we now know, is but a rough approximation of the truth and is of little real value in actual practice. The misconceptions of Liebig and his followers were largely due to the fact that they did not recognize that the average tillable soil contains from fifty to a hundred, or even a thousand times more of the chemical constituents than any crop can possibly extract from it. Unfortunately, this old hypothesis that fertilizing consists only in putting in the soil what the plants take out, still survives.

This pronouncement of the chemists as to the fertility of land, though all chemists now hold a greatly modified view of the relations of the chemicals in a soil to the fertility of the soil, was first vigorously combated by a theory of soil fertility advanced by soil physicists. The physicists hold that the quality of mineral foods in a soil is of far less importance than the quantity of water and that the cultivator should largely devote his energies to controlling the moisture in the land so that the mineral salts may be readily dissolved and be made available as a plant food. They insist upon the very great importance in soil fer-

tility of such other physical factors as temperature, aeration and the texture of the soil. The most radical advocates of the physical theory declare that chemical fertilizers are of little or no value for the food they add to a soil.

It seems to an onlooker that the chemists have not sufficiently recognized the importance of the physical condition of the soil in their teachings. At any rate, it is now certain that in practice in every field of agriculture, following instruction from chemistry, far too much importance is attached to putting chemicals into the soil and far too little to the physical means of making available for food the unavailable material now there. While many of the differences between chemists and physicists are more suited to controversy than to real practice in soil-fertility, yet much good is bound to come from the discussions now going on between the sciences they represent.

It is not quite a quarter of a century since the writer received instruction in what was called agricultural chemistry. The teacher, a pioneer chemist, gave instruction regarding the fertility

of soils. He had received his light from the flood light which began with Liebig. The instruction ran in brief that chemists could provide for practically all the needs of soil fertility. To the teacher and student of that day the now important fields of soil physics and bacteriology were wholly arid and unproductive. The centuries-old riddle of how leguminous crops fertilize land had then just been solved by the discovery that bacteria, the underworld of life, take nitrogen from the air and store it in the roots of clovers, peas, beans and their like. This revelation, one of the most important in all time for agriculture, has been followed in quick succession by one astonishing discovery after another by the bacteriologist. Now it is proved that the earth is literally alive with bacteria—a living earth, not a dead, inert one, an earth teeming with good, bad and indifferent organisms.

Now we are told that not only do bacteria store nitrogen in the roots of legumes but other bacteria change the ammonia formed by the decay of plant and animal matter into nitrates in the soil, thus saving and putting into bet-

ter form nitrogen which otherwise would have escaped into the air. Still, other of the soil bacteria decompose nitrates, setting free nitrogen which, unless combined with the salt of some mineral escapes and is lost. We are taught that the farmer can control the rate of nitrification and denitrification in the soil by drainage, aeration, cultivation, and by regulating the temperature of the soil. Thus, literally, bacteria can be domesticated and set to work at making nitrogen for the farm. As often fertility of the soil is determined by the rate at which nitrates are formed, the regulation of the bacteria of nitrification is an important factor in keeping up the fertility of lands. It becomes very necessary to keep the soil in such condition that bacteria will thrive and especially to preserve the top layer of soil which, according to present teachings, is literally the cream of the land. The theory that the soil which lies deep needs to be brought to the surface has been given many hard knocks by the bacteriologist for he has proved that the home of bacteria is humus, the debris of decayed organic matter, and surface soil alone contains humus. Several years ago the supposition arose that soil-sterility is often determined by the excretions of growing plants which may poison the land for some crops, but which may be innocuous to other plants that follow. While there is much to show that plants do give off harmful excretions, or in some way cause soils to become more or less toxic, yet the statements made by some investigators that toxicity is a prime factor in soil fertility has not yet gained general credence. The importance of toxicity of soils is denied by chemists in particular.

Just now the world-wide audiences in soil fertility have closed their ears to the arguments of chemists and physicists over their differences to listen to the zoologist who has brought his science into play to solve the problems of soil fertility. According to the zoologist the few inches of humus-filled crust on the earth's surface is veritably a jungle; a jungle filled with one-celled plants, bacteria, which are preyed upon by one-celled animals, protozoans. Now these voracious protozoans may devour so many of the bacteria engaged in changing the nitrogen of the air and soil into available plant food that their number is lessened to a harmful degree. The predaceous protozoans, however, can be removed by suitable treatment, as by chemicals or heat to sterilize the soil so that the protozoans but not all the bacteria are killed. Delivered from the mouths of their enemies, the ammonia-producing bacteria increase with tremendous rapidity and a higher level of soil fertility is quickly attained. Here at last we have a reason as to why sterilizing the soil, an operation practiced in one way and another since before Christ's time, is beneficial to the soil—another linking of a traditional practice of agriculture with a new discovery in science. The value of soil sterilization in flower and vegetable-growing under glass has long been demonstrated; it is possible that we shall sometimes use it in the fields in our efforts to increase soil fertility.

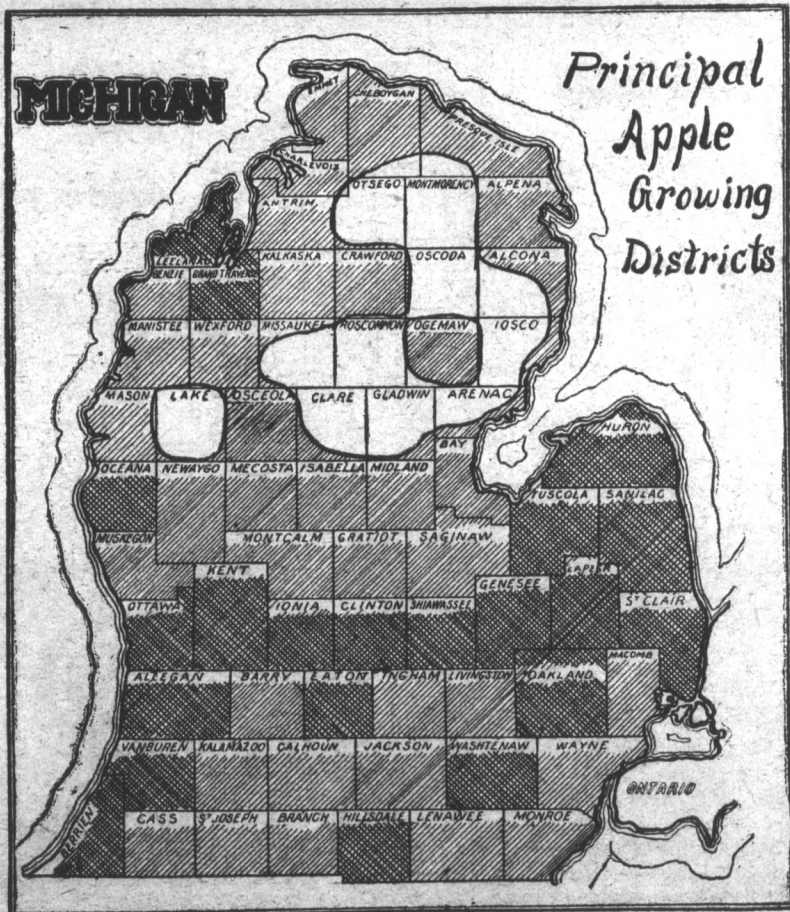
Even more recent than the discoveries of the biological aspects of the soil are those which deal with the phenomenon of absorption. The classical illustration of absorption is made by pouring a solution of a dye in a long tube

(Continued on page 43).



THE author of this article, of which the second part will appear next week, has long been identified with horticultural work. Following his graduation from the Michigan Agricultural College in 1893 and the completion of his postgraduate work at the same institution in 1895, he filled professorships in the departments of botany and horticulture at both the Oregon and Utah Agricultural Colleges and, for a short time, the position of state fruit inspector for Michigan. In 1899 he returned to his Alma Mater as assistant professor of horticulture and three years later was made full professor of that department. Not long after the wide-awake fruit men of New York state recognized the ability of Dr. Hedrick and prevailed upon him to take charge of horticultural work at the Geneva Station where he now labors. His books entitled, "Apples of New York," and "Plums of New York," and many bulletins, form permanent contributions to horticultural literature.

Where Our Apples Grow.



Heavy Producing Districts Are Double Shaded.

Good Points on Marketing

MANY of the difficulties experienced in marketing farm products are the result of carelessness or lack of knowledge of how the products are handled after they reach the city markets. The following advice from A. D. Miller, of the United States Bureau of Markets, concerning perishable products and methods of marketing should prove of interest to many readers who are interested in shipping in their own produce to market. The time is past when farmers can afford to ship inferior and poorly prepared produce to market, and every person interested in securing a larger percentage of the consumer's dollar must bear in mind that attractiveness, quality and sound business practices are necessary in securing it. Mr. Miller says:

Appearances Influence Demand.

Success in farming depends to a considerable extent upon success in marketing, and marketing has come to be a highly specialized business. It involves an understanding of human desires. The consuming public gauges its demand for a product according to the degree in which that product satisfies its tastes. Taste to a considerable extent is influenced by appearance. This is especially true in the case of perishable and semi-perishable products such as fresh vegetables, berries, apples and potatoes.

Visit Wholesale District.

Competition is keen in marketing. The farmer who wishes to sell his product at a high price, must learn the demand of public tastes, and put up his product in a way that will give the consumer reasonable satisfaction. Most goods sold in fairly large quantities pass through the hands of a middleman or dealer. These men, because of their constant touch with the trade have learned the desires of consumers.

Bureau of Market Expert Gives Sound Advice on Selling Farm Products



Good Cultural Methods Pave the Way to Better Marketing.

Whether a farmer sells direct to the consumer or through a middleman, it may pay him, if he can do so, to visit a marketing center, and spend some time in the wholesale produce district watching how sales are actually conducted. He can then talk with dealers about the methods of preparing products for market, visit their grading and packing rooms and observe how that process is done.

Write Dealer.

If a personal visit to the trade is too expensive and the farmer sells through a dealer, he should write to him, questioning him carefully about how to sort, grade and pack a product, so that it will bring the highest price.

Itemize Shipment.

When a shipment is made, it pays to load goods carefully. If possible learn from some reliable source, such as the Bureau of Markets, how to arrange material in cars so that it will best with-

stand the journey. An itemized account of the number of boxes or packages in the shipment, the different varieties, and amount of each, will be a great help to the dealer and a record for your own use. Send this statement to the dealer at once, together with a letter of explanation, stating the number of the car, the date it is to leave and the road on which it is to be shipped.

Bills of Lading.

Prompt settlements usually follow approved methods in handling bills of lading. It is customary if goods are sold for cash, to have the bill of lading made out to yourself, endorse it over to your local banker, and instruct him to send it to his banking correspondent at point of destination with attached draft for the amount to be collected. Upon payment of draft, the bill is surrendered to the dealer. If inspection is allowed this should be stated upon

bill of lading. If goods are sold on time or shipped on consignment, have the bill of lading made out to the dealer, and send it to him at once. When an advance is to be made for part of the consignment the procedure is the same as when the goods are sold for cash.

Combine Quality and Attractiveness.

When putting up goods for market, experiment upon how best to combine quality and attractiveness. These are potent factors in determining price.

Shipments for Same Market.

It is not advisable, ordinarily, to ship to several dealers on the same market at the same time, for they may compete against one another for buyers, thus bringing your product into competition with itself, and forcing down the price.

Know Condition of Market.

The farmer who sells to a dealer, finds it best to cooperate with him in handling his goods, for the more money the dealer gets for a product the more will he in turn be able to pay the farmer. If you sell by that method, communicate with your dealer regarding the condition of the trade, a few days before your shipment is ready and learn from him whether he is able to handle the shipment to advantage.

Forward Records Promptly.

In all cases act promptly in forwarding the dealer records of shipments that he may not be delayed in getting possession of goods. Market conditions often change from hour to hour. In a very short time a considerable fluctuation in price quotations may occur.

Business Cooperation.

Marketing perishable farm products is a business in itself, and cooperation between the buyer and seller is an essential principle of successful business relationship.

Accredited Herds of Cattle

By-- Prof. H. R. Smith, Author of "Profitable Stock Feeding"

A NATION-WIDE movement for the early eradication of tuberculosis from every pure-bred herd of cattle in the country was inaugurated one year ago at a well-attended conference held in Chicago between officials of the United States Bureau of Animal Industry, directors of the various cattle registry associations, state veterinarians, and others interested. At this meeting a committee of five prominent breeders was appointed to meet jointly with the Tuberculosis Committee of the United States Live Stock Sanitary Association for the purpose of drafting regulations for accrediting herds. The regulations drafted by the joint committee and later approved by the United States Live Stock Sanitary Association and the Bureau of Animal Industry provides for the annual tuberculin testing of herds of pure-bred cattle by the various state veterinarians, their deputies, or the federal officials co-operating. These regulations stipulate that a herd can be certified as tuberculosis-free by the federal and state officials when the entire herd passes two successful tests at an interval of twelve months, or three semiannual tests. If there are grade breeding cattle on the farm these must be included in the test as a part of the herd.

There is published in a recent report issued by the Bureau of Animal Industry of the United States that are now tuberculosis-free accredited herds. Of these, seventy-five are listed from Minnesota, forty-four from North Dakota, thirty-seven from Virginia, eleven from Wisconsin, with a small number from thirteen other states. The accredited herd system was first started in the north-

west and in the territory in the immediate vicinity of Washington, D. C. There are now thirty-three states which are doing this accredited work and according to the bureau report mentioned a total of 948 herds in addition to those already accredited have passed the first test. Of this number 162 are in North Dakota, 142 in Virginia, 140 in Minnesota, fifty-eight in Maine, fifty-four in Michigan, forty-four in Ohio, forty in Vermont, thirty-eight in Wisconsin, thirty-five in Indiana, with a small number in other states. A large number of herds have become officially accredited since the list was published

and a still larger number have passed the first test. The work is progressing more rapidly in those states where appropriations have already been provided with which to partially indemnify owners of reacting cattle slaughtered, and where the fund assigned to the state veterinarians are sufficient to carry on the testing which is usually done free of charge.

The new federal appropriation of \$500,000 now available will doubtless cause the work of accrediting herds to progress still more rapidly. This appropriation can be used to partially indemnify owners of reacting cattle

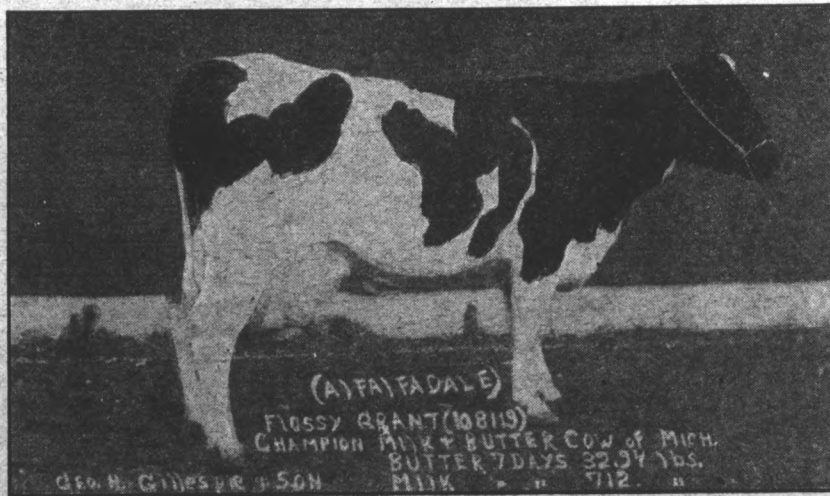
slaughtered, but in amounts not to exceed \$25 for grades and \$50 for pure-breds. This is made conditional upon the states at least duplicating the amount. Several states do not as yet have the necessary legislation to meet the conditions of the federal appropriation to make the funds immediately available, but the necessary state appropriations will doubtless be made this winter.

Representative breeders have expressed a willingness to have their herds tested annually if they are not compelled to stand the entire loss on animals which may react and are slaughtered in consequence.

Tuberculosis usually gets into the herd without the knowledge of the owner and it is but fair and just that the federal and state governments should bear a portion of the loss. The eradication of tuberculosis from all the pure-bred herds will have a material effect in reducing the prevalence of the disease among grade cattle because of the fact that registered cattle are usually sold from farm to farm for breeding purposes and if diseased carry the infection to new locations. With a reduction of the prevalence of the disease among both pure-bred and grade cattle, there will also follow a decrease in the prevalence of the disease among swine as tuberculosis in swine is caused to a very large extent by infected milk or by the droppings of tuberculosis cattle in the feed lots.

The various states have laws prohibiting the entrance of breeding cattle unless free from tuberculosis as shown by an official test. A number of states

(Continued on page 64).



New Era Confronts Our Dairymen

WITH our view of the field the problems of the producer, the problems of the distributor, and the problems of that very exceptional body of individuals—the Detroit Milk Commission, which has served us so faithfully and well, is before me at all times, and the thing for which they have striven more than anything else is a fair and equitable adjustment without hardship or oppression to any.

First, the Milk Commission: We have said so many times, and yet there seems to be a misunderstanding about the origin, authority, and compensation of this body. The Michigan Commission was appointed by the governor of the state at the request of the President and Secretary of the Michigan Milk Producers' Association. The Detroit members, which go with the Michigan Commission to make up the Detroit Area Commission, were selected by the Board of Commerce, representing the financial interests; the Federation of Women's Clubs, representing the homes; and the Federation of Labor, representing the laborers of that city. These were appointed at the request of your secretary. These individuals, outstanding in their respective fields of private endeavor, many of them men of large financial interests, have given much of their time and their very best thought, without one cent compensation, for the sake of the service that they see they are able to give to this—the most vital food industry in the city of Detroit. Every milk producer, and distributor, and consumer, is under great obligation to this body of broad minded men and women for their conscientious, painstaking endeavor to so stabilize and protect this industry, first, that Detroit may have a sufficient supply of milk at a reasonable price. Second, that the distributor and producer shall have a price that they are entitled to; namely, the cost of production and distribution plus a legitimate profit. These propositions have ever been before this commission and to reach a proper and equitable adjustment of this we know has been their most sincere desire, and this one thought and purpose is what has caused them to make the severe sacrifice they have of time and energy at our request.

To the average individual this may

*Limit in Retail Prices Has Been Reached;
Further Profits Must Result from
Better Management--R. C. Reed*



not seem vital to your success; but it is absolutely so. The only way to bring to any industry a stable and equitable business is in some way to provide a good market, and a market is never good unless there is a profit in it to the buyer. So we are concerned about our market. We want the Detroit distributors to have a fair and equitable price. We are bound to see to it, however, that they do not have more than this. They cannot have less; if they do they will not stand by the organized movement.

Your secretary has now a notice served on him thirty days ago by the distributors' organization that they would no longer cooperate with us. It has been our great aim and desire that the differences should be adjusted, the wrinkles ironed out, and no open clash made as a result of this determination. To this end we have worked most earnestly. Conference after conference has been held with the Detroit buyers; winning one and another back to us until we felt we were warranted again in calling the commission together, which had so long been delayed.

After this most earnest endeavor and adjustment the commission was called and convened Friday, January 3, at the Board of Commerce. The distributors convinced the commission that they had been conducting their business during the past month absolutely without profit, and some of them at such a loss as imperiled their future prospects. Added to this was the atti-

tude of some of the buyers—some reliable and some unreliable—who were offering more than the commission price for milk in an endeavor to disturb and destroy the business of their competitors. Consequently, for the past month we have been facing a condition which bordered on piracy in the Detroit milk area, and one little act of indiscretion, one little spark to ignite the fires already kindled, would have brought on a disturbance and a loss which might have cost all the principles for which we have been contending, and hundreds of thousands of dollars to the distributor and producer of the Detroit area.

We are thankful, however, to say that it seems now that this matter has been taken care of and that we are to go on in the year to come in a harmonious, constructive endeavor.

In all of our endeavor of the past our contention has been not for a price but for a principle. Underlying these things, first, is the fact that the farmer, the producer of food products, is entitled to the same consideration in the business world as the producer of any other product. He is entitled to a voice in fixing the price of the commodity he is putting on the market. Second, he is entitled to a price for that product that equals the cost of production plus a profit. Our Milk Commission has had this always in mind; and the president and secretary of your organization have in every instance voiced this thought and this principle before the commission.

But, in order that we may have a successful business, certain business principles must be adhered to which are fundamental to any business success. Your secretary has in his possession a list of sixty-four Detroit distributors who have been forced out of business in the last two years, while others have succeeded. What is the difference? The latter were careful about their business methods; the others possibly, had no business methods. This applies with equal force to the producers of milk. No one concern is more quoted in all we hear than the Detroit Creamery Company and its profits; and yet we are about to give you the history of one milk producer which is comparable to any profits of the Detroit Creamery Company. We have the figures of one herd of nine cows that, in the year 1918, sold 118,575 pounds of milk, bringing in \$3,481.75. The owner of this herd has a farm of seventy acres, with no unpaid help available. The oldest of seven children is less than nine years of age, and we will concede that the wife has quite enough to do without assisting with the cows. We don't know what the cost of feeds has been, but we do know something about this man's methods. Limited in every way ten years ago, with no personal asset but a determination and a business sense to apply to milk production; on a rented seventy-acre farm, he has gone forward until he owns the farm he then rented; he has also acquired a splendid herd of pure-bred cattle, and has today in his barn sufficient feeds to carry his cattle through until next fall; these feeds, bought at a time when he could take advantage of the market, to have on hand as the occasion required.

These are just simple business methods applied to the dairy industry. We believe this individual has made a greater profit on his daily overturn than has any distributor in the Detroit area. What he has done can be and should be duplicated by hundreds of men who think their only prospect of success is in getting a better price when they would be a failure with milk at any price. Is this a strong assertion? Is this true?

Let me tell you what your association has been trying to do. We have

(Continued on page 65).

News of the Agricultural World

LOSSES OF BUTTER-FAT.

LOSSES of butter-fat in the process of manufacture are estimated after careful experiments by the Minnesota Experiment Station, University Farm, to be 3.17 per cent of the total received in the milk by the creameries.

The results reported were obtained in normal operation of the creamery, no special effort having been made to reduce the amount of mechanical losses. The figures arrived at are as follows:

Skim-milk retained 1.64 per cent of the total fat received at the factory, and buttermilk .93 per cent.

About 0.5 or one per cent of the total fat received lost mechanically in vats and pipes.

About 1.4 per cent of total butter-fat received in cream lost in the process of manufacture.

When the losses were accurately considered, the butter-fat in the milk, determined by the standard Babcock methods, checked with the fat in the cream separated from it, and the butter-fat in the cream as determined by the Babcock test checked with the fat in the butter as determined by chemical analysis. It is clearly pointed out

in the bulletin, further, that cream does not test the same in milk test bottles as in cream test bottles.

COLLEGE OATS MAKE GOOD.

COLLEGE-BRED" oats are making good with the farmers in Michigan, according to a report from the Department of Farm Crops of M. A. C. on yields obtained during the season of 1918. These oats, which were developed by the plant breeder of M. A. C. with a view to supplying Michigan farmers with varieties that will thrive under Michigan conditions, in some instances yielded as high as one hundred and eight bushels to the acre.

The variety of oats known as "Worthy," yielded an average of fifty-five and one-quarter bushels to the acre all over the state. Its record yield was one hundred and five bushels; its lowest yield twenty-seven bushels. On sandy land, a second variety, known as Alexander, averaged 34.8 bushels to the acre. On clay and clay loam, this variety averaged sixty-five bushels to the acre. Of other varieties, Wolverine is leading with an average of 56.8 bushels; College Wonder is reported at fifty-four bushels, and College Suc-

cess is third with 52.7 bushels per acre. The average yield of common oats in the state was about thirty-two bushels.

HOGS SALVAGE DAMAGED WHEAT.

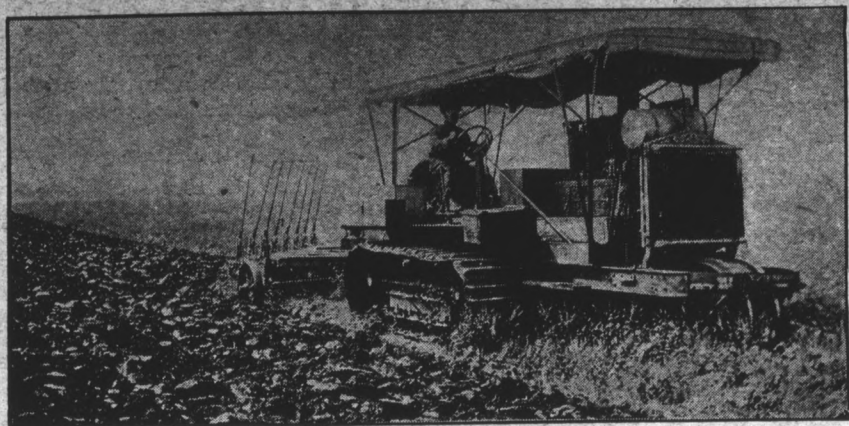
WHEN a hail storm came crashing through Stillwater county, Montana, and beat 48,000 acres of the choicest wheat into the ground just a few weeks before harvest, it left some discouraged farmers. It looked like a total loss, aside from the limited state hail insurance carried. Stillwater county, however, was fortunate in having a farm bureau and a live county agent. An executive committee meeting of the farm bureau was held at once, and it was decided that most of the wheat could be saved if hogs could be secured to clean up the fields. The county agent immediately got busy "hog hunting" among the other bureaus of the state, and the president of the county bureau went to Helena to get the State Council of Defense to authorize the advance payment of fifty per cent of the hail insurance money help finance the purchase of the hogs. Both efforts were successful. The agent in Stillwater county inspected and ac-

cepted the hogs, they were shipped direct to the Stillwater county farmers, and 2,300 head were put to work salvaging the damaged wheat.

MARL USEFUL IN AIDING CLOVER.

WIDER use of marl, found so commonly in many parts of the state, will help much to remedy acidity of the soil, declares Dr. M. M. McCool, of the Department of Soils at M. A. C.

On one farm in Ingham county, where analysis by the college of samples of soil showed it to be of a depleted sandy type, use of marl increased the income from the land as much as \$15 an acre. The soil on this farm was in such condition that it had been impossible for a number of years to secure a good stand of clover from it. Where no marl was applied, the first cutting gave 1,648 pounds to the acre, a large share of which consisted of weeds. On that part of the farm where marl was used, 2,764 pounds of clover were secured from each acre. The second growth was allowed to mature seed, yielding about one bushel to the acre. The profit on this farm from the use of marl to remedy an acid condition of the soil, was \$15 an acre.



Going "Over the Top" in Food Production for 1919.

Protecting Newly Placed Concrete

NEWLY laid concrete must be protected against the elements and against injury from other outside causes until the concrete has thoroughly hardened. In most cases this protection need be no other than a covering of some sort which will prevent rain from falling directly on the exposed concrete surface.

In certain climates, and in certain seasons of most all climates, especial precautions must be taken to protect the concrete against freezing temperatures. There are various ways of doing this. The most effective and also the most usual and easily accomplished is to build a sort of covering over the concrete either of boards or canvas and place under this covering small stoves or heaters which are kept burning continuously until the concrete has hardened. The heat given off by these stoves will be sufficient to prevent the concrete from freezing, even though the canvas or board covering should not be entirely air tight.

In seasons of extreme heat it is also necessary to protect the concrete against direct rays of the sun and direct exposure to the heat. Such exposure will cause the water in the concrete mixture to evaporate or dry out before the concrete has had an opportunity to harden, and thus an inferior concrete will be produced, particularly at the surface. The best way to protect the concrete against such injury is to keep it covered with water until it has hardened. In the case of pavements or floors, this is easily accom-

plished by building little dams of clay or other suitable material across the surface of the concrete and keeping the enclosed spaces filled with water for several days, or until complete hardening has been accomplished. In other cases where this method is not practicable the concrete may be protected by keeping the air in the room in which the concrete is located saturated with moisture, either by means of escaping steam or fine spray of water.

The presence of water or moisture in the atmosphere will not in any way injure the concrete, either before it has hardened or after. Before hardening has set in the presence of moisture in the air is exceedingly beneficial to the complete and thorough hardening of the concrete. After the hardening has been accomplished the presence of moisture in the air will not affect it.

The application of paint or other protective coatings to concrete work before it has hardened will cause it serious injury. This injury arises from the fact that the hardening process will be materially retarded by the admixture of any substance not properly a part of the concrete mixture. The concrete at the surface will also be materially weakened by this application and in all probability will peel off after the concrete below the surface has hardened. After the hardening process has been completed no protective coatings of paint or other material are necessary to protect the concrete from the elements or injuries.

Winter Strawberry Notes

Mulching our new strawberry bed was completed November 28. Although the ground was slightly crusted it was insufficient to bear the weight of the team. However, the soil being well drained, no injury was done either to the soil or plants. The materials used were bean straw and corn stover. Bean straw makes an excellent mulching material for strawberries. Being coarse it does not settle closely, unduly excluding air and light. Another valuable feature possessed by this material is that it is entirely free of foul seeds. This is true of corn stover also. Those who have had experience removing grass and weed growth from a fruiting bed of strawberry plants that was introduced by way of mulching material used, have reason to appreciate the value of a material free of every sort of seed. The corn stover used had not reached the tasseling stage when cut, but for all that it is too coarse for an ideal mulch, as it will not retain soil moisture quite as efficiently as a material less coarse. When shredded, corn stover makes an ideal mulch.

A year ago strawberry growers in general neglected to apply the winter mulch until snow had gone in spring, and the low temperature of last winter was pretty hard on unprotected straw-

berry plants. Injury from this source reduced yields fully one-half or more. None of the growers in this vicinity will be caught in this manner the coming season for each bed of plants has already received a protecting mulch.

With the exception of one row lying next to the timber where shade, grubs, and tree roots combined against plant growth, this new bed of strawberry plants has a stand one hundred per cent perfect. This result was secured by using pot-grown plants to fill in the vacancies. This bed of plants is in the twin hedge row, the style used by us for many years. Not only are the rows perfectly filled in, but the individual plants are a little the finest of any heretofore grown by us. The size of plant crowns and vigor of their foliage was a source of great satisfaction to the owner throughout the fall. Hopes and expectations were high in anticipating the harvest while the plants were being provided with a winter protection. With such plants as those, and with an abundant water supply close at hand it seems as if there is a good chance to harvest one of those phenomenal yields that we have read about but never as yet succeeded in duplicating.

Emmet Co. M. N. EDGERTON.

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For The Victory Crop



—Seeds that Must be Right or You Get Your Money Back

With the coming of Victory America needs great crops. Millions of hungry mouths in war-torn Europe look to America to feed them. It means American farmers must produce the biggest crops in history, and big crops mean many extra dollars in profit for the grower. He will get high prices and help will be plentiful. There must be no "Slacker Acres;" no crop failures, if human effort can prevent it. Good seed is of first importance—proper planting and proper care next. To be sure of the seed you plant—get

Isbell's Seeds
"As They Grow Their Fame Grows"

For Garden



For Farm

They give you the very best that money can buy at prices that save you money. 40 years' experience goes into Isbell's Seeds. Ceaseless experiments, careful selection and testing has produced the most hardy, big-yielding varieties. Only the cleanest, purest seed ever reaches an Isbell customer—seeds you can "bank on" being good, full of life and will grow. Every ounce is Guaranteed. You can have your money back if your own tests do not prove satisfactory. This fair and square Isbell policy has made more than 250,000 satisfied buyers of Isbell's seeds.

It's Money in Your Pocket to Investigate

It means money saved to buy at Isbell's fair prices and money made by growing bigger and better crops. Never has care in the selection of seed been more important. Isbell's modern methods of preparing seeds for market in its new modern plant and Isbell's "proven value," Michigan grown varieties are as near crop-insurance as you can get.

Isbell's 1919 Seed Annual Now Ready

It's a true guide for growing a Victory Crop. It shows how quality seeds are selected, cleaned and tested. It's written by men who have years of experience, and shows how to take the guesswork out of planting. With this book we'll send you your choice of any field seeds you may want to test. Simply send name and address—the book and sample seeds are Free. Do it today. A post-card will do.

FREE Samples

Ask for free samples of Northern grown farm seeds. Here are three leaders.

Wolverine Oats

Wonderful new heaviest yielding variety, measured bushels weighing 45 to 48 lbs.

Michigan Alfalfa

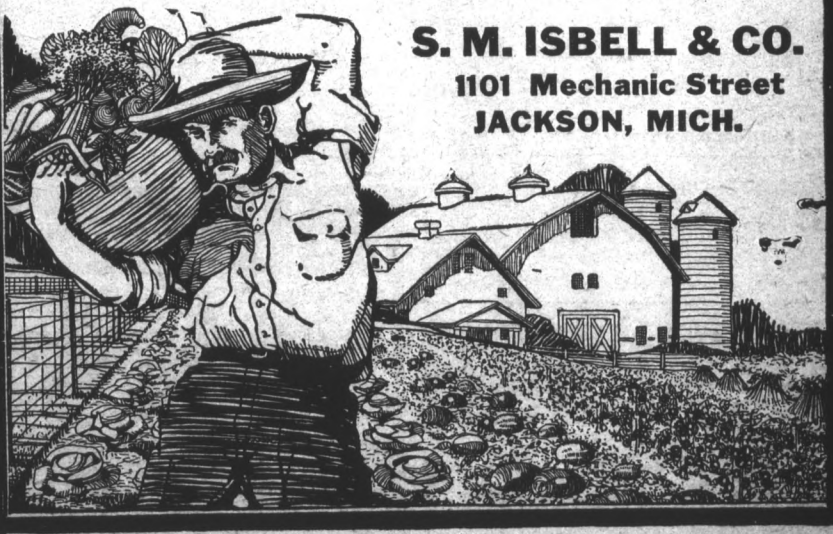
Can double the value of every acre on your farm. The hardiest, surest strain grown.

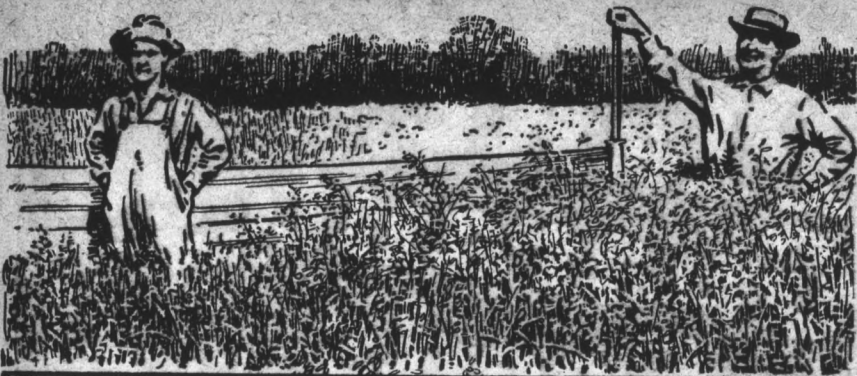
Isbell's "Surething" Corn

Matures quicker and surer than any other White Dent. Makes corn growing a certain profit.

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Showing the Difference between Unfertilized and Fertilized Oats

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An Investment for Profit - Not an Expense

SINCE 1881 thousands of farmers have used Jarecki Fish Brand Fertilizers. They have proved profitable when farm products were high and when farm products were cheap.

Farmers who grow grain for the market know that Jarecki Fertilizers have often doubled their yields—giving them double the return from the same land—labor and machinery.

Farmers who raise livestock have found that fertilizing their crops enables them to raise all their feed and have some to sell at a profit, or will enable them to carry from 50% to 100% more livestock on the same land—not to mention the added manure.

The illustration above shows the difference between fertilized and unfertilized oats. All too often oats are grown simply for purposes of rotation or as a nurse crop for grass and clover. But with proper fertilization this need not be so. Fertilizer will enable you to grow more oats per acre and at a lower cost per bushel—produce more energy for your horses and more straw for the manure pile.

Jarecki Fish Brand Fertilizers are mixed to feed the plant continuously. They supply every crop requirement. For more than 35 years they have been used by thousands of farmers. Write us for full information and name of dealer near you.

Dealers wanted in unoccupied territory.

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Only \$2 DOWN ONE YEAR TO PAY

38 Buys the New Butterfly Jr., No. 2, Light running, easy cleaning, close skimming, durable. EASY TO CLEAN. NEW BUTTERFLY. Separators are guaranteed a life-time against defects in material and workmanship. Made also in four larger sizes all sold on 30 Days' FREE TRIAL and on a plan whereby they earn their own cost and more by what they save. Postal Write for Free Catalogue Folder. Buy from the manufacturer and save money. [9] Allough-Dover Co. 2125 Marshall St. Chicago

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Plenty of Nitrate in Chile

The amount of Nitrate in the Chilean Deposits is

720,000,000 Tons

At present rate of world's consumption, deposits will last for

300 Years

Shipping conditions are improving. American farmers should learn the FACTS. Write for information.

WM. S. MEYERS

Chilean Nitrate Committee
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GET FULL VALUE OUT OF YOUR GRAIN

Grind it and Feed it on your own place, where nothing is lost. Besides roughage, live stock must have Concentrates. Ground Grain is the most effective and economical.

BOWSER FEED MILLS

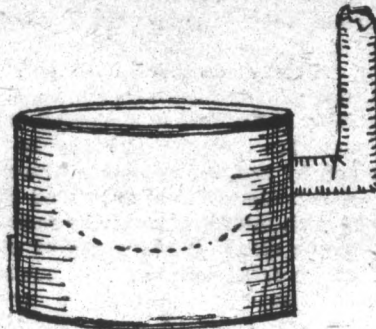
"Always Reliable" Crush ear corn (with or without husks) and grind all kinds of small grain. 10 sizes, 2 to 25 H.P. Sold with or without Elevator. Write today for catalogue. The D.N.P. BOWSER CO. South Bend, Ind. Ft.

Suggestions

KETTLE DRUM.

THE kettle drum in the accompanying drawing is a very convenient article at butchering time for heating water for scalding hogs or for rendering the lard; it may be used in the sugar camp for boiling down sap or finishing off the syrup, also. It requires a great deal less fuel than in the old method of the open kettle, the kettle heats quicker and better results are obtained all round. The fire can be extinguished instantly by simply throwing a bucket of water in it, and no poles are needed to support the kettle.

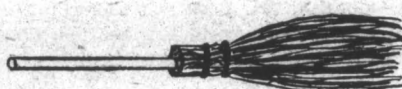
The drum is made of galvanized iron or pieces of sheet iron from a discarded stove may be used. The kettle rests on top of the drum and fits snugly about the top. It is well to reinforce the top and bottom of the drum by riveting round the edges a piece of strap



iron like that of a buggy tire. It should be built high enough so that the bottom of the kettle is raised about ten inches off the ground; this will provide ample space for firing. A section or two of stove pipe is sufficient to provide a good draft and carry the smoke above those working about. The draft is regulated by a small door that slides up and down in the front. This door need not be more than 12x12 inches square, as no coarse wood is burned. The finer the wood used the hotter the fire obtained.

HANDY BROOM FOR OUTDOOR WORK.

A VERY handy broom about the barn, garage, lawn, etc., can be made as follows: Procure from trees fifty or sixty small twigs or branches

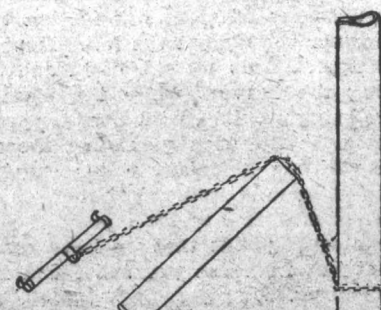


three feet long. Trim them so as to make a compact bundle and tie them together at one end with a strong rope. Drive the sharpened end of a broomstick into them, and the broom is complete. The sweeping end is not trimmed, but left irregular and the handle is made of the desired length for convenient handling of broom.—P. A. G.

TO PULL POSTS.

I HAVE found the following a very simple and satisfactory method of pulling posts:

Incline a smaller post, about two feet long, against the one to be drawn, in the manner illustrated, allowing about two feet between the bases of posts. Pass a chain around the base of the upright post, and over top of inclined post and then hook it to the

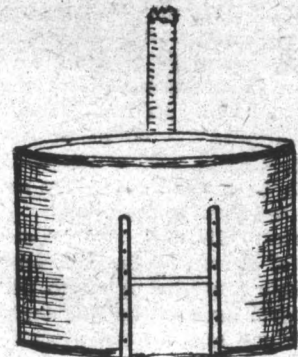


whiffletrees. As the horses pull, the slanting post acts as a lever, and the other post is drawn out of the ground.—B. B. L.

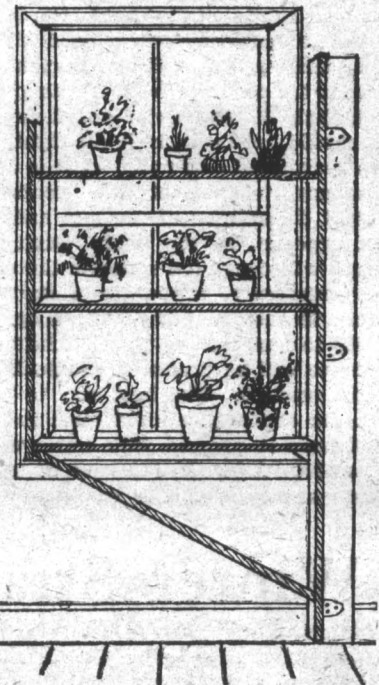
SWINGING PLANT STAND.

THIS swinging plant rack enables the housewife to swing her plants back away from the window during cold nights and at times when it is desired to wash the window. The rack is made the same size as the window frame and fastened with strong hinges to a substantial timber fastened securely alongside the window frame. A strong brace extending from the bottom of the upright timber diagonally to the outside corner of the frame prevents the sagging of the rack.

By means of a hook, either on the window frame or on one of the shelves



the apparatus may be held close to the window or released so the shelves may be swung clear of the window during the night or while the window



is being cleaned. In the summer, when plants are not needed in the house, the whole apparatus may be easily removed by removing the upright timber.

TIME-SAVING METHOD OF CARRYING WOOD.

TAKE a strip of burlap six by eight feet long and sixteen inches wide and attach lath at the ends, as shown. A rope is then attached to each lath as shown in the sketch, for the handles. Pile the wood on the burlap and



when enough wood is placed on it to be easily encircled by the burlap, grasp the rope handles and thus carry it. The filling of the woodbox will not require the usual amount of time if this simple arrangement is used.—P. A. G.



ORCHARD SOILS AND FERTILIZER.

(Continued from page 37).

filled with chalk. The dye is separated from its solvent and is held by the chalk, the clear solvent showing at the lower end of the tube. It has long been known that when solutions of minerals are poured on soils, the dissolved salt is absorbed by the soil particles. One sees at once that the economic use of commercial fertilizers depends largely upon absorption. But the physical-chemist has discovered new and even more important phases of absorption.

It is now well demonstrated that soil particles not only absorb substances but also exercise selective absorption whereby the constituents of chemical compounds are absorbed at different rates. Thus, if potassium chloride be added to a soil, potassium is absorbed more rapidly than hydrochloric acid. That is, the soil particles possess themselves of the potassium and the hydrochloric acid reacts with other mineral bases. Thus not only is the potassium made available to a plant but other substances may be brought into solution to serve as plant foods. Again, if more than one substance be dissolved in water the presence of one of the substances in the solution may affect the rate at which the other is absorbed. As an example, if kainit and nitrate of soda be dissolved together in water the absorption of potassium is reduced and less kainit remains in the soil than would have been the case had not the nitrate of soda been added.

I trust that this brief and fragmentary discussion of absorption at least shows that results of great practical importance are bound to come from further study of the phenomenon. What has been said, too, of the relatively recent discoveries in absorption may help to demonstrate the complexity of the problems which must be solved before we can fully control soil fertility.

These lengthy statements introduce you, if you are not already acquainted with them, to some of the problems of soils and soil fertility. I have sought so to show the changing attitude of science and the repetition of discoveries in this phase of agriculture that no one will think that the problem of soil fertility is solved, nor hail the latest discovery as possibly the last; that it may be seen more clearly what a complex problem of chemistry, physics and biology the study, to get back to my subject, of fertilizers for fruits becomes; how small a part of the field the few experiments now to be discussed cover; how difficult experimental work with fertilizers is; and how extremely cautious one must be in interpreting results either of experiment or of experience.

An orchard should be well cultivated for at least five or six years after planting, and if the ground is strong enough, hoed crops, such as potatoes, beans, melons, etc., may be grown to advantage. After these are harvested, the ground should be sown and rotated with catch and cover crops that will supply and aid in holding the fertilizing elements required for the young and growing trees.

A sharp knife and a clean cut are essential in pruning the young trees, and without it damage is often done which more than offsets the benefits of pruning.

Don't plant trees too close. The distance apart depends to a certain extent upon how the orchard is to be cared for. If the trees are to be kept well pruned they may be planted closer than if they are to be allowed to grow without pruning.

Feeding the World

Food! To supply enough for hungry millions stricken by war is one of the most vital of all the problems confronting humanity.

Production must be tremendously increased if the world is to be saved from starvation.

Europe, despoiled and depopulated, has become a continent almost entirely of consumers.

It remains for America to feed the world.

Last year, meeting its obligation, America furnished to other countries almost twelve million tons of foodstuffs.

But the need increases. And in 1919 America alone is pledged to contribute twenty million tons to hungry humanity abroad.

To accomplish the mighty task every acre must be made to produce its maximum capacity.

The shortage in man power and horse power that menaces the undertaking can only be offset by mechanical power.

We must have tractors. And with them we must have tractor tillage implements that fit the ground best—that have the built-in quality to withstand the strains of racking service day by day.

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And Oliver will rise to that responsibility even if it means producing a plow a minute every working day.

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"Oliver Plowed Fields
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Earn Big Money Cutting Wood

With a Howell Drag Saw Machine. Turn your timber into cash. Big coal shortage. The demand and prices for fire wood are greater than ever. Our drag saw cuts more wood in less time and at less expense than any machine built. Send today for our FREE catalog and prices. R. R. Howell & Co., Mfrs., Minneapolis, Minn.

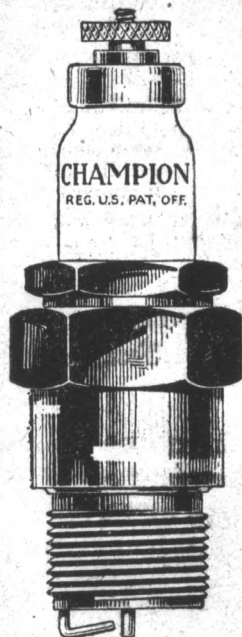
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12 varieties, sack gathered, Northern grown, shipped upon approval. Our 112-E holds world's record yield for Northern variety. Free cir. C. H. & J. Graves, Antwerp, O.



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Most dealers call your attention to the name "Champion" on the porcelain when they recommend this make of plug.

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The most essential accessory ever put on the Ford car. Worth many times its cost in the saving of time, labor and gasoline.

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seed, Northern grown, free from Johnson grass 20c per lb., bags free, postage, express or freight extra. White Sweet Clover, scarified, 30c. Alfalfa \$3.00 per bu. and up. Order early. Supply short. Quality guaranteed satisfactory.

Henry Field, Shenandoah, Iowa

SCOTT'S RED CLOVER

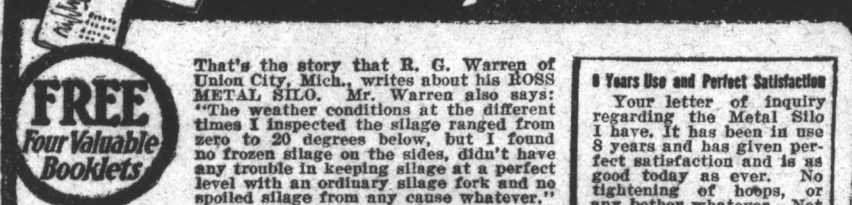
We are trying to furnish Red Clover entirely free from weed seeds and dead grains. The seed will go farther than ordinary seed besides adding greatly to the production. Ask for samples of Red and other seeds and catalogue telling "How to Know Good Seed".

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Wanted position on a farm by married man, by month or year, between Howard City and Traverse City; farm experienced.
EDW. SCHAEF, R. 2, Box 104, Sturgis, Mich.

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A ROSS METAL SILO is air tight—no air can work in and spoil the silage. The natural juices of the silage are retained and allowed to properly ferment, and every fork full from top to bottom is clean, pure silage that is fit to feed and on which your stock will thrive. The ROSS is easily put up by one man in spare time. It is made of rolled metal and properly treated to withstand all climatic conditions, as well as the acetic and lactic acids contained in ensilage. Each metal sheet is enameled—not galvanized—the outside with three coats of battleship gray and the inside with four coats of black, acid-resisting enamel which

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The more you know about silos, the better will you be able to judge which kind best answers your purpose. So we want to send you these booklets containing many facts which you may want to know before you buy your silo. Your name on a postcard will do. Send for them today.

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Ross Wood
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HAVE SEED BEANS TESTED.

AN amount of blight and anthracnose sufficient to make these diseases very dangerous to the crop in 1919 has been found in samples of seed beans which within the past several weeks have been submitted to the Department of Botany of M. A. C. for examination. Samples from Ingham, Kent, the "Thumb" and a number of other districts showed blight present in as much as ten per cent of the seed. Anthracnose, while not so widespread, was discovered in 1.4 per cent of the seed. Word is accordingly being sent out to growers emphasizing the need for the careful selection of beans, with suggestion that particular efforts be made to see that seed is clean and free from diseases.

In connection with its effort to assist the stamping out of anthracnose and blight in the state, the Department of Botany is offering to make free tests for these diseases if samples are submitted. These samples can be left with county agents for forwarding to the college, or can be mailed direct to the Department of Botany, Michigan Agricultural College, East Lansing. When inspection of the samples has been made, a report is forwarded to farmers by the department, informing them as to whether the seed is safe for planting.

"There is plenty of good seed in Michigan," declares Dr. G. H. Coons, of the college. "The problem before the farmer is simply to find this seed and conserve it for planting purposes."

PROTESTS AGAINST STATE CONSTABULARY.

Is it not about time we began to ask ourselves where we are at and what this all means? Taxes going up yearly by leaps and bounds and now a move on foot to create a permanent constabulary, which consists of state mounted police with headquarters at Lansing, for the benefit of who, God only knows unless it might be for the careful protection of the capitol city, or Lansing, and if so let them pay for it.

It is claimed the world is getting better, and I think it is. Our county officers are all crying because they cannot make a living without being put on a salary basis where heretofore they worked on mileage, percentage, etc., etc.

I do not know the cost of maintaining this state constabulary but I do know it all means a bill of expense for the taxpayers of Michigan.

They tell me they have fallen in line in other states and we should do the same. If other states vote a big tax on themselves is it any reason why we should?

Now, gentlemen, if you are not in favor of a state constabulary get busy and get up petitions, send them to your representatives and senators and tell them where you stand, and commence cutting corners at once.

I have no axe to grind. My interests are all with the taxpayers of Michigan, now and all of the time.

Montcalm Co. JOHN J. BALE.

The profit and pleasure to be derived from the use of horses depends upon how much they have been trained. Every colt should be trained before he is put to work on the farm.

Manures, fertilizers, and crop rotation will not compensate for a lack of underdrainage of the soil; in fact, they only add to the real expense of growing crops without recompense.

Good farmers use fertilizers for the permanent improvement of their soils. Poor farmers use them to get a little more to sell from their impoverished lands.

Developing the Peach Orchard

THE peach is a fruit that requires constant care or profitable crops cannot be produced. Annual pruning is necessary and the low-headed tree must be developed carefully for it is a tree of that type which is easiest to harvest, thin and spray. The low-headed tree is less apt to break when covered with ice and snow or heavily loaded with fruit. The peach wood is brittle and if long limbs are not carefully pruned and headed back, it is sure to result in breakage, especially at the crotches.

If a strong limb on the young peach tree grows in the direction of the prevailing winds in the section, it pays to encourage that limb to develop and thus prevent the tree from becoming lop-sided. If some judgment is not used in heading the young tree into the wind, an entire orchard may soon show the unsymmetrical effect of allowing too much of the wood to grow in one direction.

The open-center is necessary. The foliage of the peach tree is dense and peaches sell best which show a blush instead of being dull and green. It is the sunshine on the fruit which makes the blush and by so keeping the middle of the tree open, the grower is able to bring the light to the peaches and they are improved in appearance and market value.

Limbs should not be allowed to cross. If this occurs, one of the limbs may be weighted with fruit and bear down upon the other, increasing the danger of breakage. Head back the twigs with a pair of shears on a pole and thus avoid climbing trees more than necessary. When the twigs cannot be cut back from the ground it is better to use a step-ladder than to climb into the trees and risk splitting the limbs or scraping the bark.

The fruit buds of the peach are formed on the previous year's growth of wood. In pruning out the new wood be sure and leave enough to insure a good crop. Moderate thinning of the new wood helps to thin the crop and this is a much less expensive form of thinning than the removing of a part of the young fruit after it has been formed.

The amateur grower can learn a great deal about the pruning of peaches by visiting the orchard of a skilled grower and studying the symmetrical form of the trees.

Ingham Co.

R. G. KIRBY.

SHRINKAGE TOO LARGE.

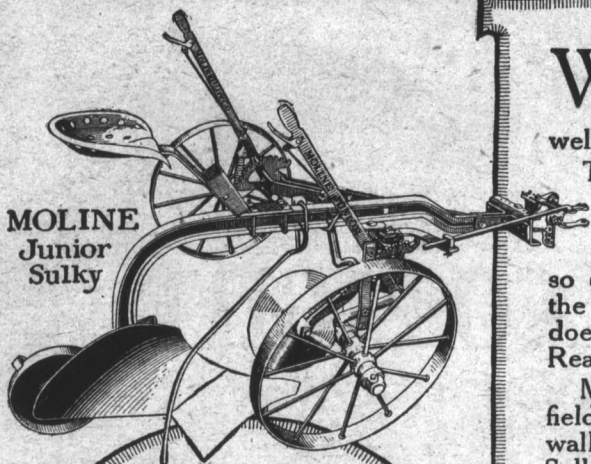
THERE is a general complaint in this section, (of our county, at least), on account of the shortage in weight of shipments of poultry to Detroit markets. I would like to know, if this is general with all parties shipping to Detroit, and why should it be so much. We of course, understand there is shrinkage in shipment but do not believe there is as much as the difference between the weight we deliver to the express company and the returns we get from the commission house. The shrinkage on the last crop I sent to Detroit was slightly over fifteen per cent. I would like to hear from other parties who ship to Detroit, also parties on the receiving end at Detroit, if they can produce facts. I have written in regard to shrinkage to commission companies but received no satisfactory answer.

Van Buren Co.

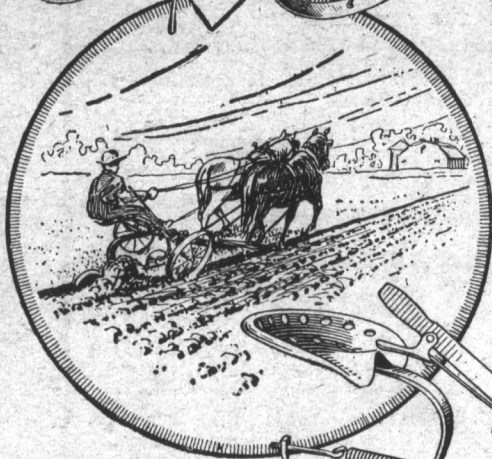
R. G.

(What have been the experiences of our readers in shipping poultry to Detroit or elsewhere? Write us, giving particulars.—Eds.)

MOLINE PLOWS



MOLINE Junior Sulky



MOLINE Best Ever Gang

WHEN you buy a Moline Plow you get the benefit of 54 years' experience in plow building. The two plows illustrated here are particularly well adapted to your locality.

The Moline Junior Sulky is sold at a price in reach of all. But you can't do better work with the most expensive sulky. It is low in price because it is so simple. And because it is so simple it is so easy to operate. Just drive, and the team does the rest. It pulls no harder than a walking plow, does much better work, and you can ride in comfort. Read what a Moline Junior owner says.

Mr. Carl Liedlien of Saginaw, Mich., says: "I had a field that was so hard I was unable to plow it with my walking plow. I purchased a 14-inch Moline Junior Sulky and started it in the same field and found I had no trouble in making it stay in the ground, cutting a wide furrow and turning it in very good shape. I was more than surprised at the lightness of draft, as it seemed to pull no harder than a walking plow."

The Moline Best Ever Gang is also exceptionally light in draft. "My Moline Best Ever Gang runs easily one horse lighter than my other gang," says W. V. Clark of Winterset, Iowa. In every other respect you find the Moline Best Ever Sulky or Gang everything you desire most in a foot lift plow.

We make a complete line of both horse and tractor plows, with either steel or chilled bottoms.

See your Moline dealer about your Moline Plow or write us stating your requirements and we will be glad to advise what Moline Plow is best suited for you. Address Dept. 42

MOLINE PLOW CO., MOLINE, ILL.

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Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only \$19.95. Skims warm or cold milk closely. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our—

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We save you money on your Seed Bill. Write for our Special Money-Saving Price List and get our reduced prices on Best Quality Guaranteed Seed. You should know about our low prices. Write at once and be convinced. Everything guaranteed equal to samples or money refunded. Don't pay double profits on Grass Seed. Our seeds are sold subject to government test. Have low prices on Seed Corn, Oats, Wheat, Speltz, Barley, Cane, Millet, Cowpeas, Rape, Vetch, Sudan Grass, Potatoes and all Farm and Garden Seeds. Don't order until you write for big 116-page catalog. Free samples and special low prices on seeds you require. Will send free 60-page book on Growing Alfalfa to those who ask for it. Write at once, as we can save you money. A. A. BERRY SEED CO., Box 231 Clarinda, Iowa



SCOTT'S SWEET CLOVER

Hulled and scarified white sweet clover is about ten dollars per bushel cheaper than red. (Unhulled cheaper yet.) As it is a biennial, taking the place of red in the rotation and any amount better as a land builder, it is an economical substitute. Winter sowing is the best. Ask for samples and prices as well as our catalogue telling "How to Know Good Seed". All other kinds of field seeds too.

O. M. SCOTT & SONS CO.

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PURE AND PURE

TIMOTHY \$4.50 PER BU AND UP

Save money—Buy direct from grower. New re-cleaned Iowa Grown Timothy, free from noxious weeds. Guaranteed satisfactory or money refunded. Low prices on Clover and grass seeds. Big catalog. Samples free. Write before advance.

A. A. BERRY SEED CO., Box 331 CLARINDA, IOWA

SWEET CLOVER

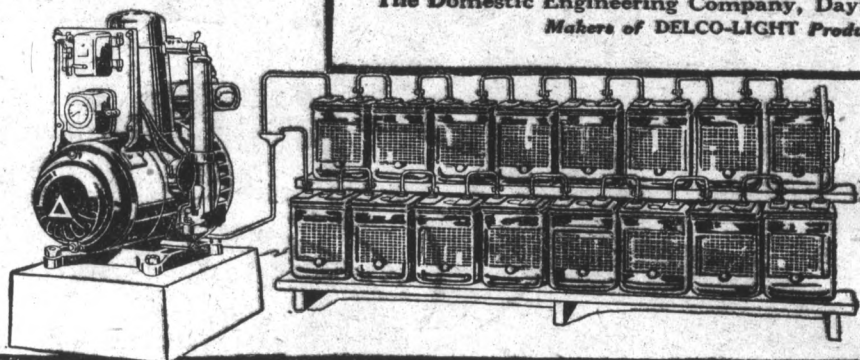
White Blossoms; the greatest money-making crop of today. Big money for the farmers who grow it. Builds up land rapidly and produces heavy, money-making crops while doing it. Excellent pasture and hay; inoculates land for alfalfa. Easy to start; grows on all soils. Our seed all best scarified hulled, high-germinating and tested. Quality guaranteed. Write today for our big, Profit-Sharing Seed Guide, circular, free samples. Address American Mutual Seed Co., Dept. 931 Chicago, Illinois

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A Complete Electric Light and Power Plant for Farms and Suburban Homes—Self-Cranking—Air Cooled—Ball-Bearings—No Belts—Thick Plate Long Lived Battery.

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DELCO-LIGHT Blazed the Way

Delco-Light has carried the conveniences and labor-saving efficiency of the city to the farm districts.

It has proved that electric light and power on the farm multiplies man-power and saves both time and labor.

Delco-Light is accomplishing these results today on more than 60,000 farms.

It is a good investment because it actually pays for itself.

Delco-Light is a Complete Electric Light and Power Plant;—

It furnishes power to operate the fanning mill, grind-stone or washing machine—to milk the cows, operate the cream separator or tumble the churn—to pump fresh running water to all parts of the house and barn.

It supplies bright, clean, safe electric light—makes it easy to do chore work after dark without the bother and danger of old-fashioned lamps and lanterns, thus reducing the fire hazard.

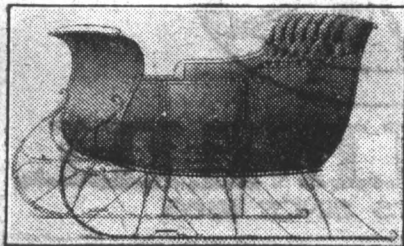
Delco-Light runs on Kerosene. The same coal oil or Kerosene formerly used in lamps and lanterns now furnishes both light and power.

Thousands of testimonial letters prove these things in actual experience of Delco-Light Users

The Domestic Engineering Company, Dayton, Ohio, U. S. A.
Makers of DELCO-LIGHT Products

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All style cutters, with and without springs, also gears and Light Bobs, at reduced prices. Send for Catalogue.

Kalamazoo Carriage & Harness Co.
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Farms and Farm Lands For Sale

90-Acre Farm \$1350 With Horse, Cow and

Hens, farm tools, buggy, harness, hay, 20 bu. potatoes, garden vegetables and dry wood included by widowed owner if taken soon, part down. Only 3 1/2 miles live R. R. town, creamery, sweet corn cannery, shoe factory, etc. Machine-worked fields, fenced pasture, trout brook; estimated several hundred cords wood, 5-room house, water at sink, mail delivered, telephone, 38-ft. barn. Details to see it page 68 Strout's Catalogue. Copy mailed free. Dept. 311, E. A. STROUT FARM AGENCY, Ford Bldg., Detroit, Mich.

Beautiful modern home, steam heat, 8 lots, expensive shrubbery, fruit and shade, block from CENTRAL MICHIGAN NORMAL COLLEGE, will sell or trade for small farm, or stock general merchandise. Cooper, Gover & Francis, Mt. Pleasant, Mich.

U. G. REYNOLDS Sells Gladwin County Farms, Stock Ranches, Unimproved lands. Many choice bargains at this time. GLADWIN, MICHIGAN

Vassar, Mich. Farm for rent on shares. 300 acres 200 under cultivation. Good building, good land, good water. Address Box 304, Vassar, Mich.

Wanted To hear from owner of farm or unimproved land for sale. O. K. HAWLEY, Baldwin, Wisconsin

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ANYTHING ABOUT FRUIT GROWING

Does something seem wrong With your fruit trees? "Ask Mr. Favor." Is your yield small and the quality poor? "Ask Mr. Favor." Do you want to know how other orchardists have increased their crops by 500%, 1000% and even 5000% in a single season? "Ask Mr. Favor."

Mr. F. H. Favor, scientific horticulturist, is nationally famous as a fruit expert. His experience has covered many years, as editor of one of the leading Fruit Journals and in several state experimental departments. He knows trees and fruit from every angle.

His services are free to any fruit grower in America. No matter what your trouble is, just "Ask Mr. Favor." He will answer you in a personal letter.

Get This Wonderful Book by Mr. Favor
Mr. Favor has prepared a masterful spraying guide showing exactly when and how to spray and what to use for big results. This book is a veritable encyclopedia on spraying. The published price is \$1.00. To readers of this paper who act promptly, we'll mail a copy for 25 cents, stamps or coin. Also catalog etc. Don't miss this chance. Write at once.

HAYES PUMP & PLANTER CO.
Department L Galva, Illinois



MICHIGAN JERSEY CLUB MEETING.

THE annual meeting of the Michigan Jersey Cattle Club was planned for January 14-15-16, but it has been thought best to set February 4-5-6 as the date. We hope that by changing the date the influenza situation will be under control and that the weather may be good and that all things will work together for a successful meeting.

A good live program has been prepared. We are to have some of our best Jersey men as speakers and it will be very worth while to all who are interested in the dairy business to attend this meeting.

There was never a time when the outlook was better for the dairyman than now, if the conditions are fully considered and studied. The needs of the world are great. The ranks of the dairy cow are depleted and the needs are great. The children of the world must be fed and there is no food that will take the place of milk and butter.

Are you, the Jersey people of Michigan, ready to meet the confronting situation? Are you ready to do your share in supplying the great demand of the nation and the world? I for one feel that cooperation and the union of forces is the only way in which we may make the greatest success and the only way that the Jersey cow may "come into her own." Jersey people of Michigan! Let us get together at the meeting at the College, East Lansing, February 4 at the banquet, and February 5 at the meeting. If you have problems bring them with you and either at the meeting discuss them or in private share them with those you meet and find a solution. Let us make this the greatest meeting the club has ever had. Come prepared to give something to help others, as well as to receive. The fighting with guns is past, but there is a great war to be waged against hunger and desolation.

Let us do our part as befits us. Let us do our part to show them that we are exploiting in the Jersey the best, most economical dairy machine living, now, at the time when economy is so essential to efficiency. Remember the date, February 4-5-6, and the place, the College, East Lansing. Program will be printed later.

LIVE STOCK MEN MEET IN FEBRUARY.

THE live stock business in Michigan will be closely surveyed in February by members of the Michigan Improved Live Stock Breeders' and Feeders' Association, who on February 3-4-5-6-7, will meet at M. A. C. for their annual convention. Incidentally, it is reported that the men identified with the producing end of the beef, mutton and pork industry in the state, will during their sessions give some of their time and thought to the packers' industry.

The meeting of the live stock men this winter will be conducted at the same time as farmers' week and the housewives congress is in progress at the college. This fact is expected to make the program of the meat producers much broader and more interesting than it has ever been before, according to Prof. G. A. Brown, secretary of the association.



Why Sheep Loose their Wool

MANY sheep lose their wool, especially toward spring, from other causes than the effects of scab. In fact, if scab is present the animals are just as liable to lose their wool at one time of the year as at another. Because sheep begin to rub and bite and pull off wool, is no evidence that they are bothered with scab, as they will do that if irritated with ticks or anything else. But in order to find out what is the matter it is well to make an examination at once.

It may be well to give some of the symptoms, appearance and effect of scab. However, the man who has once seen its effects and has noticed it particularly, will never mistake scab for anything else or anything else for it. The scab insect works between the inner and outer skin. Starting at some point, usually in the flank, the insects work outward from a common center and as they thrive and multiply they keep spreading, and some will get to other portions of the body and start a new colony, as it were. Their work

Condition Cows First

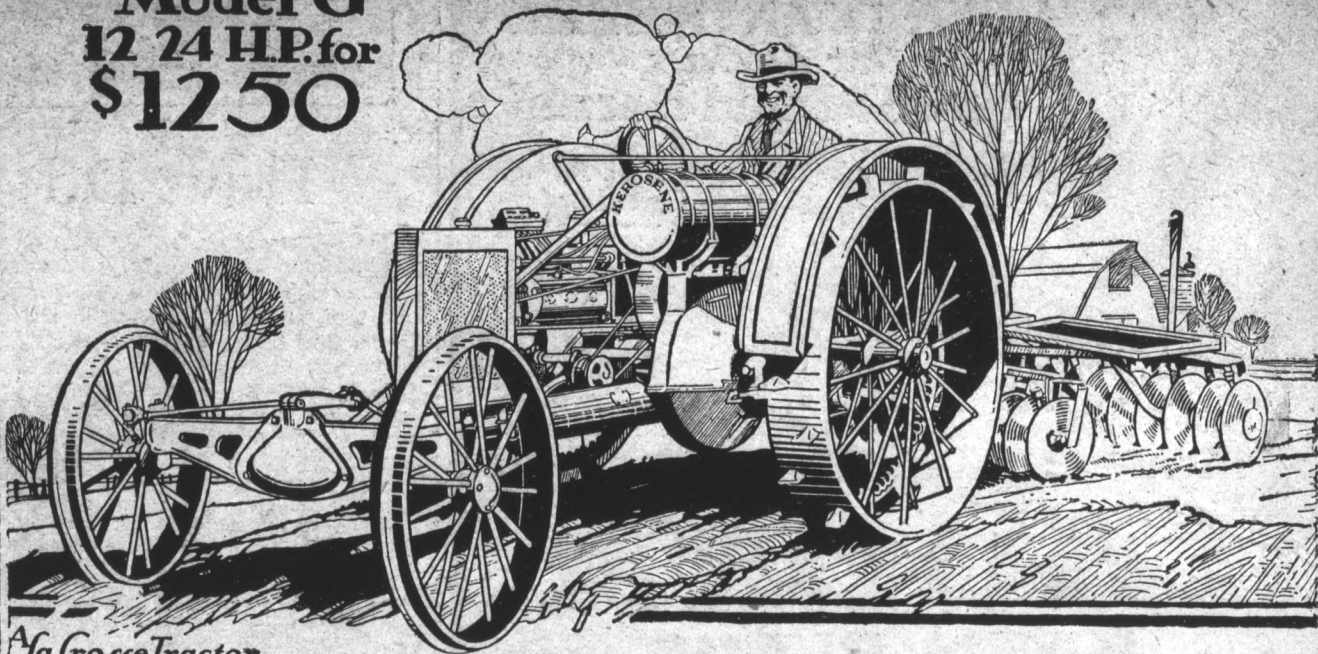
GIVEN two cows of equal dairy capacity, the one conditioned as she should be, and the other rather thin in flesh, and the one in the best condition will make the best record every time. Not only this, but condition enables many breeders to break a milk and butter-fat record with a cow that conditioned no better than those which she excels, must surely have produced much less. Feeding for milk and butter-fat records is one of the places where brains and experience are indispensable. The feeder must not overlook a single factor in his work; least of all can he afford to begin a feeding test without having his cows in as good condition as his competitors, for some, if not all, of them will put on test animals in the best condition it is possible to get them.

causes a yellow matter to form in these spots and this in turn will form into a scab. Of course, such a scab irritates the animal and it will rub and pull at its wool, and whatever scab has formed there will come off with the wool. Even if they did not pull or rub the scabs off, they would fall off in time. Sheep are sometimes afflicted with similar scabs and other causes. For this reason, it is best to procure a strong magnifying glass, when it can be readily determined whether the trouble is genuine scab or not.

Sheep scab is not a very hard disease to eradicate, as is usually supposed by those persons who have no experience with it. A couple of good dippings with a dip will cure the disease if the dip is properly applied. However, some precaution is necessary to keep the animals from becoming infected again from old scabs and wool that may have been rubbed off. In warm weather the scab insects that

(Continued on page 68).

Model G
12-24 HP. for
\$1250



La Crosse Tractor
means
a Happy Farmer

Announcing the New La Crosse Tractor

HERE is the new four-wheeled La Crosse Tractor, the triumph of the master engineers of the great La Crosse organization. Commencing with the first of January, 1919, we are bringing out this new model and are giving it a name of its own "The La Crosse Tractor".

The La Crosse Tractor is based upon the proven engineering principles which have been so successful in the La Crosse Happy Farmer Tractor, combined with standard four wheel construction of the most practical type.

Wherever you see the bright orange of the La Crosse Tractor there you may expect to find a Happy Farmer. The La Crosse Tractor means a Happy Farmer, for it is the tractor which in all soils and climates, on flat or hilly ground, in day time or night time, does the work you want it to do quickly, economically and efficiently.

Three Plows—12-24 Horsepower

The La Crosse is the standard three plow tractor. With its 12-24 horsepower it is the tractor of just the right size. It is large enough to do any power farming job on the average farm, while it is small enough to be economical on fuel and light in weight. You can handle it, together with the La Crosse Tractor Implements, single-handed.

The La Crosse is the simple tractor. It burns kerosene perfectly, and is equally efficient on either belt or drawbar.

La Crosse Tractor Implements

The new La Crosse Tractor and the special La Crosse Tractor Implements make the perfect team for efficient work. These implements are made according to the same standard as the La Crosse Tractor and offer you maximum convenience and strength. La

It is the policy of the La Crosse Tractor Company never to be satisfied with anything but the best, and to keep perfecting the La Crosse Tractor so that it shall always be the leader of the field. The La Crosse Tractor as it is placed on the market today contains every feature which has made the Happy Farmer famous, with new improvements which make it the up-to-the-minute tractor you are proud to own.

Crosse Tractor Plows, the Special La Crosse Tractor Disk Harrow and the La Crosse Power-Lift and Power-Pressure Grain Drill can all be handled entirely from the driver's seat on the tractor.

See Your Dealer Now

Write us today for the name of your La Crosse Tractor dealer. Tractor prices are constantly advancing. The demand is much greater than the supply. Compare this price of practically \$100 a draw-bar horsepower with the price of any other tractor on the

market. The La Crosse Tractor will actually develop more than 12 horsepower at the drawbar. Yet it sells today for \$1250, and is rated at 12-24 horsepower. This price is subject to change without notice. Write us today.

Model G, 4-wheel La Crosse Tractor \$1250
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TRACTOR



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I want to mail you, POST-PAID, my New, Big, 96-page BARGAIN BOOK. Over 160 styles to choose from. Don't buy a rod of fence until you get my new ROCK BOTTOM PRICES. I'll save you 20% to 40% and sell you better fence. I PROVE IT BEFORE YOU BUY.

Factory Prices—Freight Prepaid

BROWN FENCE has earned a reputation for LONGER LIFE because it is a STIFFER, STRONGER FENCE. Made of heavy, acid test, Galvanized, Basic Open-Heath Wire—that's why. Send for Bargain Book and sample, both FREE, postpaid. Do it now.

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Direct to Farmer at Wire Mill Prices

CATALOG FREE

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It pays to buy **Tix-Ton-Mix** with salt the year around keeps flock healthy and free from stomach worms and ticks. A \$5.00 box makes \$60.00 worth of medicated salt—saves you big money—A \$2.00 size box of **Tix-Ton-Mix** by parcel post will medicate a barrel of salt.

Tix-Ton-Mix
Keeps away Worms
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"Your Flock Needs It"

Write for club offer—booklet on "Nature and Care of Sheep"

PARSONS CHEMICAL WORKS
Leona Park Experiment Station, GRAND LEDGE, MICH.

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Shows 74 Barns and Other Farm Buildings with Floor Plans and Estimated Cost of Each

LOUDEN BARN PLANS

is a comprehensive, carefully written, authentic, easily understood, well illustrated book on Barn Building. Written by experts, under the direction of Mr. Wm. Louden, who has made a life study of building, arranging and equipping barns to the best advantage for convenience, economical operation and profitable results.

112 Pages—Barn Building Illustrations

on every page, with text matter explaining same. Chapters on concrete work, drainage, ventilation, lighting, details of framing, floor and roof construction, etc., etc.

Sent Postpaid—no charge or obligation. If you contemplate building or remodeling a barn, write for this book at once.

No charge for Louden Expert Service. Write us what kind of barn you have in mind, number and kind of stock you wish to house. Suggestions and blue prints cost you nothing. Complete working plans supplied at very low cost.

Let Louden Modern Equipment Save Half Your Barn Work

It does away with a big part of the barn work, and makes what is left of it easier—enables a boy to do a man's work, or one man to perform the work of two or three men.

Besides this, Louden Equipment saves feed, conserves manure value, provides the comfort and cleanliness necessary for the safety and health of your live stock, increases the quantity and improves the quality of dairy products.

Easily installed in any barn, old or new. Always pays for itself in a short time.

Get 224-page catalog—postpaid—no charge It shows the full Louden Line of Stalls and Stanchions, Feed and Litter Carriers, Animal Pens, Hay Unloading Tools, Power Hoists, Detachable Water Bowls, Barn and Garage Door Hangers, Cupolas, Ventilators—*"Everything for the Barn."* Fill out the coupon today for any or all of the above named service.

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 1908 Court Street (Established 1867) Fairfield, Iowa
 Branches: St. Paul, Minn. Albany, N. Y. Chicago, Ill.



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 whose inventions in
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Europe is hungry. How hungry, well-fed Americans can scarcely realize. Your opportunity is at hand. The foreign demand for your crops will be great for years to come. But you men on the farms of America can grow enough food for export only by taking extra care with your seed beds.

"Acme" Pulverizing Harrows

Make Perfect Seed Beds

They cleave the soil easily, turning, pulverizing and leveling it. "The Coulters Do the Work." They cut up sod and trash, and compact the lower soil, yet leave a protective mulch on top. Every "Acme" has a comfortable seat—no more weary plodding over soft ground. And there's a size to suit your farm, big or little. Our largest size hitched to a tractor does the best job of fitting you've ever seen.

See the "Acme" line at your dealer's. He should have a stock on hand. But you need our latest catalog, which tells how to make perfect seed beds. Send for it today; also ask for special circular on the "Acme" Disc Harrow.

Duane H. Nash Inc.
 456 Elm Street
 Millington, N. J.



How Do You Stand?

HERE are some issues of importance to Michigan rural communities and to farmers in particular. The following resolutions show the position taken by the members of the Farmers' Clubs of the state on the different subjects:

Whereas, one year ago we were engaged in a terrible conflict between autocracy and militarism on one side and the spirit of true democracy on the other, and

Whereas, the agricultural interests of the whole nation, of its men, of its food and of its wealth, has been laid on the altar of our country, and

Whereas, efforts of our Allies have been marvelously successful in bringing a magnificent victory,

Therefore, be it resolved, that we are thankful to Almighty God in vouchsafing to the nations of the earth freedom, justice and equality.

Resolved, that the legislature be recommended to so amend the drain law as to eliminate as far as possible the expense of advertising, which now is often from twenty-five to forty per cent of the cost of the drains.

Whereas, the inestimable right of franchise has been granted to women

Therefore be it resolved, that she should have a full protection of all its benefits, privileges and prerogatives of any citizen of this government.

We reaffirm our positive position in favor of the Torrens system of land transfers.

We recommend that any business house using the word bank in any way, shape or manner shall be compelled to submit to inspection by the State Banking Department.

Cooperation, conservation and distribution in the food supply is essentially the problem of all the population.

Therefore, we recommend organizations which can handle larger units in distributions according to supply and demand, and these organizations shall eliminate superfluous distributions and endeavor to distribute the exorbitant profits of the middleman to the consumer.

Inasmuch as the mortgage tax law is a farce and the burden of taxation is borne by real property,

Therefore, we recommend that a higher graduated income tax be levied to meet the exigencies arising from the continually increasing number of individuals and corporations, whose contributions to taxation are exceedingly small.

We agree with Mr. Hoover that every industry should be entitled to the cost of production plus a fair or reasonable profit; but the justice of this is not seen in fixing the food production of the northern farmer and allowing all manufactured products to be sold at exorbitant prices.

Whereas, the War Board having purchased tractors to be sold to the farmers, such tractors being advertised by the manufacturer as being equally good for belt power, and it having developed after their purchase that they were useless for belt power,

Therefore be it resolved, that we request the War Board to insist that the manufacturers make good to the purchasers the loss they sustained, and

We recommend that this association appoint one delegate to cooperate with the War Board to secure such adjustment.

The startling success of the non-partisan league in the northwest should serve as a warning to the legislature and business circles of the state.

The farmer is going to have a square deal and representation in matters affecting his interests and the upheaval in many central states should serve as a warning to those who, to promote their selfish interests, or for political expediency combine to deprive agriculture of equal recognition and consideration with the other business and political interests of the state.

We wish to enthusiastically endorse the work of the Agricultural College and its extension department and experiment station.

We recommend a more general use of the educational facilities afforded through the institution by the farmers of the state, their sons and daughters.

We enthusiastically recommend to the legislature that great care be exercised, that nothing be done which shall

in any way hamper the work or curtail the usefulness of this institution.

Whereas, the last session of the legislature for the appointment of a Budget Commission of Inquiry to study and report upon all of the financial affairs of the state, and that commission has made its report, after a diligent study into all of our state affairs, and

Whereas, by that report it is urged that good methods of handling the public business requires the use of the budget system of appropriation, a compulsory system of uniform accounting, adequate supervision of state printing, and a concentration of state purchasing, and

Whereas, it is the opinion of that commission, and we heartily endorse the same, that much money could be saved the taxpayers of Michigan, a much better check could be had upon the public funds, and that there would be much greater efficiency in the state government, if these provisions were enacted into law,

Therefore be it resolved, that it is the sense of this meeting that the next legislature should pass upon these subjects and embody them in the laws of this state, and be it further

Resolved, that we urge upon the members of the state legislature elect, their earnest efforts to the end that a budget system of appropriations become the fundamental plan of our state finance, and that, in addition the purchasing by the state be so centralized and concentrated that the state may have the benefit of the public credit and of quantity purchases in its dealings for state institutions, and that all accounts be required to be uniformly kept so that comparisons can be readily made, and that all state printing be centralized in one body so that an adequate check can be placed upon same and someone definitely held responsible for expenditures for that purpose.

We recommend the work of the Hon. George Prescott, food administrator for Michigan. He has been fair and just to agriculture and secured justice for the farmer where there seemed no other remedy possible.

We believe in a State and National Chamber of Agriculture to establish and maintain the economic expression of farm conditions and to interpret and guide supply and demand based on cost of production and ability to consume, together with power to participate with other industries in readjustments, a vital necessity. We therefore recommend that there be a committee appointed of three members to aid in the formation of such a body.

We commend the State War Preparedness Board for the faithful performance of its duties and for the liberal appropriations to agriculture for the purpose of increasing food production during the war.

We most heartily commend the action of Fred L. Woodworth, State Food and Drug Commissioner, and the state constabulary for their efforts in enforcing the liquor law.

Whereas, agricultural organization has become the greatest need of our country life, and whereas the farmer only by concentrated action can bring to agriculture a compensatory price for labor and investment, and whereas the welfare of our country demands that the distributor no less than the producer shall render a service fully commensurate with its cost and whereas the gap between the producer and consumer must grow steadily worse under existing conditions, for forces between were never better organized to enforce their pleasure.

Therefore be it resolved, that this State Association of Farmers' Clubs in convention assembled, proceed at once to help develop a farm organization that shall reach from local and country units on to a state and nation-wide body, that may not only give the producer a voice in the councils of the state and nation, but shall aim to see the farmer's products delivered efficiently to the consumer at a price that brings justice to all.

We commend the work of State Market Director J. N. McBride, and Federal Field Agent, Mr. Hale Tennant. We believe their work has benefited the farmers of Michigan and we ask that there shall be a continuance of these offices with Mr. McBride and Mr. Tennant each in his respective office.



STOP Being Robbed Of Your Cream Profits!

INVESTIGATIONS covering six counties of a good dairy state prove that nearly 9 out of 10 dairy farmers are actually **throwing away \$20.00 per cow each year!** They are letting out-of-date and inefficient cream separation methods actually steal away that amount of earned butter-fat profits per cow.

That's **one** of the reasons why some farmers are not getting rich!

This cream waste is something that Swedish dairy farmers would not permit. Their farming conditions have compelled them to cut out **all** cream waste. Their demand for **perfect** cream separation has produced the most efficient cream separator in the world—the **Viking**.

Get All the Cream, Get More Profits By Using A

Over
ONE MILLION
In Use

VIKING CREAM SEPARATOR

Guaranteed
For A
Lifetime

LOWER IN PRICE—GREATER IN CAPACITY

Quick shipments always assured from warehouses at 29 different distributing points through out the United States and Canada.



You save money when you buy a **Viking**. You save cream and add to your butter-fat profits every day you use a **Viking**. Experts' tests prove that the **Viking** actually has 100 pounds of milk greater capacity **per hour** than many separators which cost much more than the **Viking**. Furthermore, the **Viking** is the closest skimming machine in existence. It is guaranteed to skim down to three one-hundredths of one per cent. In actual work it has often skimmed down to one one-hundredth of one per cent.

Made in the World's Largest Separator Factory

World-wide demand for **Vikings** has built up the largest separator factory in existence. 180,000 **Vikings** are sold every year. Each one is made of the finest quality Swedish iron and tool steel. Simplest separator made

today. Easiest running; operation starts the minute you begin to move the handle. Whole bowl can be thoroughly cleansed in less than 3 minutes. See it at your local dealer's store.

These Two Free Books Will Open Your Eyes to Scores of Ways to Increase Your Dairy Profits

These two books are **Free**. We want you to have **both** of them. Read them. They show how the most successful dairy farmers are netting fat profits. Every page is packed with plans and methods and systems that have **proven** profitable to hundreds of American dairy herd owners. Just fill out the coupon—clip it off—and mail it to us tonight.

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Get Both of these Books **FREE**—Mail us your Name and Address on the Coupon

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Send me your 2 **FREE** books at once



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RADISH SEED SITUATION IN MICHIGAN.

AFTER hearing many complaints of the radish seed growers of this part of the state, the writer is thoroughly convinced that the growers' only protection is in organizing and refusing to raise the seed, unless the seed companies agree to test, weigh and pay for the seed when it is delivered at the shipping station.

We anticipate all manner of excuses from the seed companies, why they cannot do this, but we have always found, where there is a will there is a way, and if the seed companies have to do this in order to get the seed, they will find the way.

Some men will say that they have raised seed for this company or that company and they have always found them to be square and they are willing to trust them again, but let us see what some of these square companies will do, if by some mistake of theirs, they stand to lose money where there is a chance to shift the blame on to the grower. Example: A grower shipped thirty bags of seed to a company, on instructions given by them. It was received and stored with a lot of seed piled on top of it until it spoiled, and the farmer is still looking for his pay. We have heard others say that this was a good company to deal with.

Another grower had the same deal tried on him and after an investigation found his seed and compelled the company to pay for it. Others have been waiting eight and ten weeks for their money and some find when the check is returned for the seed, they have been docked thirty-five per cent.

When the seed is paid for, at the shipping station, and is the property of the seed companies, they will see that it receives the proper care if it does cost them a little extra money, but if it belongs to the farmer they will take a chance, if it does go wrong the judgment is assessed against the farmer.

Space forbids an account of all the troubles, but we find when the parties can meet face to face and deal before the property has left the hands of the grower, there is always better feeling and we believe that the companies will find that they can get more and better seed, by meeting the grower half way and giving him a square deal.

The farmer has the habit of changing from one company to another, when he is dissatisfied, but we find that this is poor conciliation when they are all dealing on the same plan.

There is no other body of men in the country, except the farmer, who would ever think of doing the large amount of work which radish seed growing requires, take chances on the weather and all of the other hindrances, which sometimes develop, and then turn the goods over to another, to do with as he saw fit, and then abide by their judgment as to what he should have.

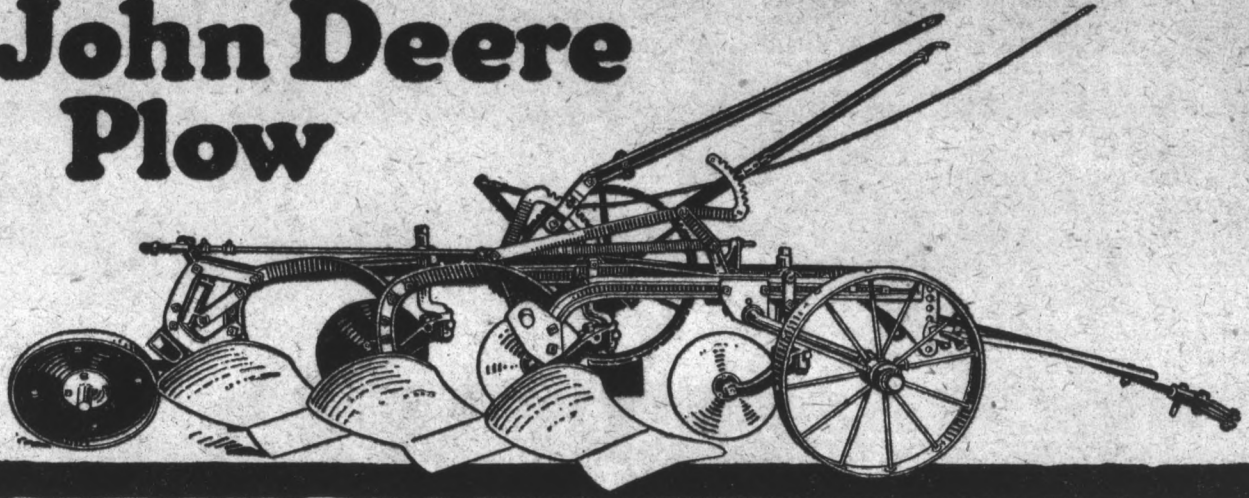
It is time the farmers take some definite action to let the business world know, that they propose to look after every detail of their business and if others wish to deal with them, they must do business as they do with other business men.

W. C. CRIBBS,
County Agent, Antrim County.

It is time land owners were insisting upon systems of farming which will conserve fertility. Long leases, crop rotation, and feeding good live stock, form a policy of maintaining soil fertility that should be demanded by every land owner in Michigan.

It is a wise young man who uses his dad's stumbling blocks as stepping stones to success on the farm.

It's a John Deere Plow



FOR many years farmers everywhere have associated the name "John Deere Plow" with special plow quality—with better and longer plow service. Getting this quality is especially important when you buy a tractor plow. A tractor plow does work on a big scale—the quality of the work counts in proportion. A tractor plow must stand heavy strains—its ability to keep on doing good work year after year counts strongly in making plow profits. Remember, you get this special quality when you buy a

JOHN DEERE TRACTOR PLOW

Equipped With Genuine John Deere Bottoms—the kind that have an established world-wide reputation for long wear, good scouring and thorough seed-bed making. You can get the shape and type suited to your soil.

Holds To Its Work At Uniform Depth—It is locked into the ground at plowing depth through the action of the power lift. And here's another mighty important feature assuring the John Deere's good work—the land wheel is set back, balancing the weight of the plow over all three wheels, just as on your sulky or gang plow. Makes plow run steady and assures plowing at uniform depth in uneven ground.

Quick Detachable Shares—Strong and close fitting. Loosen one nut to remove the share. Tighten the same nut and the share is on tight. It stays tight.

Extra Strong Construction—Extra heavy beams of special John Deere steel. We guarantee them not to bend or break. Heavy beam braces, long lapped and securely joined to beam with heavy bolts and lock washers.

High and Level Power Lift—Lifting mechanism is simple, strong and positive. Parts move only when plow is being lifted or lowered—practically no wear.

Three Sizes—Two-bottom, three-bottom and four-bottom. One of the sizes suits your tractor. And, remember, the adjustable hitch adapts the plow for use with any standard tractor.

Farmers Everywhere are making sure of continued good plow service behind their tractor by getting John Deere Tractor Plows. You can't afford to get less than that behind your tractor. WRITE TO DAY for full information.

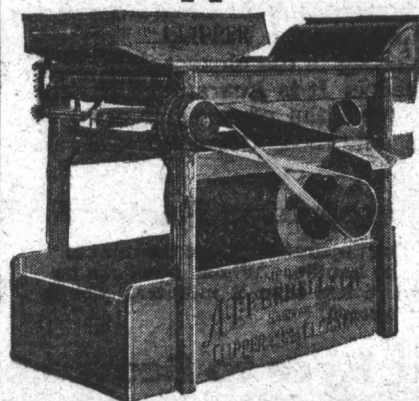
JOHN DEERE, MOLINE, ILLINOIS

GET QUALITY AND SERVICE



JOHN DEERE DEALERS GIVE BOTH

The "Clipper" Grain and Seed Cleaners



The Clipper is different in principle from all other grain and seed cleaners. It has been thoroughly tried out by years of constant use by thousands of the best farmers, the U. S. Department of Agriculture, Agricultural Colleges, Experimental Farms and hundreds of the leading seedsmen, seed corn growers, etc.

The Clipper is the only mill that has the "Vertical Blast", which weighs every seed and kernel, separating the light, shrunk, immature seed from the plump, heavy mature seed, 98% of which will germinate under test. This point alone makes much of the difference between crop success and failure.

No Mill Will Do Good Work Without the Proper Assortment of Screens

We furnish an outfit of 12 screens for cleaning and grading all kinds of seed, seed grain, seed corn, clovers, alfalfa, millet, timothy, flax, peas, beans, cow peas, soy beans, etc. And, after the most careful study and tests in actual work, we guarantee this screen outfit to be the best that has ever been offered with any mill. There are screens for clover containing buckhorn or plantain, timothy seed containing pepper grass, for separating cockle from wheat and many other difficult separations.

Sold Under a 30 Day Guarantee of Satisfaction or Money Refunded

Made in Two Sizes: No. 1-B \$31.50. (Freight prepaid to any point east of the Mississippi River.)
No. 2-B \$40.00.

In Successful Farming Three Factors are Prominent—the Soil, the Man and Good Seed. The Clipper Cleaner puts success within your reach by insuring the Good Seed. Write for Catalog and the address of the nearest jobber.

A. T. FERRELL & CO., SAGINAW, W. S., MICH.

Save Half on Nursery Stock!

Buy Hardy, High-Grade Trees and Ornamentals Direct from Nursery. Save agent's commission. Big, new, handsome 1919 Catalog describes the best stock grown. Many specialties. All Guaranteed. Start an Orchard this year. Order early for spring planting. To be sure of spring supply write today—a postal will do. Catalog FREE.

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R. K. TIRES LOVE SNOW AND MUD

Ordinary tires find Winter going hard—because they're ordinary tires. But R. K. Tires are retreaded, double chain stitched, and take to the snow and mud like a duck does to water. Yet they're half the price of ordinary tires!

The following are the little prices of our guaranteed tires.

Size	Price	Size	Price
30x3	\$ 7.00	34x4	12.00
30x3 1-2	8.50	34x4 1-2	13.50
32x3 1-2	9.00	35x4 1-2	14.00
33x4	11.50	36x4 1-2	14.50

Add \$1.00 to the above for Non-Skid Tire
2 percent off for cash with order.
10 percent deposit required with all C.O.D. orders

R. K. Tire Company

837 No. Broad St. Philadelphia, Pa.

Send for descriptive booklet and price list.

Comfort Indoor Closet

Odorless—Sanitary—Germ-Proof
Every home without sewerage, plumbing or running water needs one. Anyone can install. Placed in any room in house. 10,000 in use.

U. S. HEALTH BUREAU APPROVES
Says: "Chemical Closet complies with requirements. Abolish cold outdoor closet. Germ-life killed by chemicals. State Boards of Health endorse it. 10,000 in use. AGENTS WANTED. Exclusive territory. CATALOGUE FREE. Comfort Chemical Closet Co., 661 Factory Bldg. Toledo, O."



CORN CARLOADS

Carpenter Grain Co.

Battle Creek, Michigan

Special Days at the Community Church

By N. A. McCune

WE had Christmas doings the other night, in the People's Church at East Lansing. Santa Claus was there, too. Everybody thought he was great except one little boy, and he was pretty nearly scared to death. Some way Santa couldn't make a hit with him. And we had a tree, all decked out with colored electric lights, and around it were heaps of presents.

These presents had two qualities that were very interesting. For one thing, they were all useful presents. There were apples and potatoes, onions and carrots, canned peaches and canned pears, tomatoes, jellies, breakfast foods, even to grapenuts, and toys. We classify the toys among use presents, because anything that brings joy to a child is useful. We are children only once, and sometimes a toy is a real epoch-maker in a child's life. Don't you recollect the first jack knife you ever had? And the second interesting fact about these presents was, that

they were all brought for folks who are less fortunate than we. In other words, they were brought for the people who needed some outside help to make Christmas worth while.

We believe in teaching the children in the Sunday school that Christmas isn't entirely a matter of what Santa Claus is going to bring me, but, what can I do to make someone else happy? And this makes the jolliest kind of Christmas. In the olden time we went to the church Christmas eve and got our presents there. How we used to wait, with our hearts in our mouths, waiting for our names to be called. And always somebody was there whose name wasn't called. Whereupon there was much weeping, and the superintendent scurried about looking for a stray knick-knack to give the broken-hearted youngster.

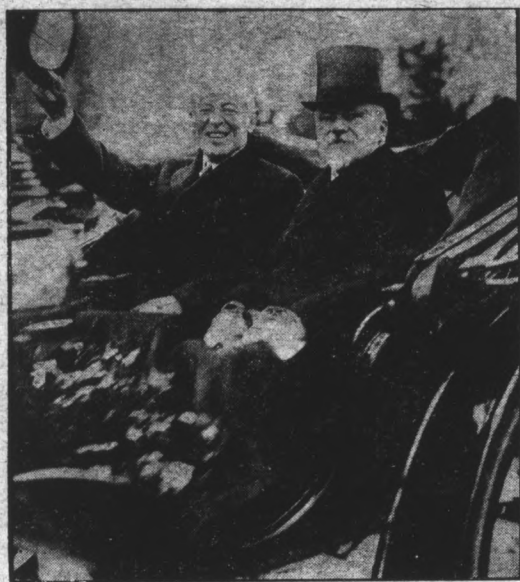
The new way is the better way. It gives Christmas a real meaning for the children. Then the next day comes the fun of distributing these presents among the folk in town who need them. It is an opportunity the church has each year, of making itself felt among those who perhaps never hear a sermon, from one year to the next.

Thanksgiving is another special day that can be made of great use to the church. Or, better, it can be used by the church in most useful ways. Last month an enterprising pastor of a rural church had a community Thanksgiving dinner in the church. The day was wet, the mud clung to the wheels of the gentle little Fords, like moss to stones. But the gentle Fords came just the same, and when the good people sat down to the steaming dinner tables and sang "Praise God from

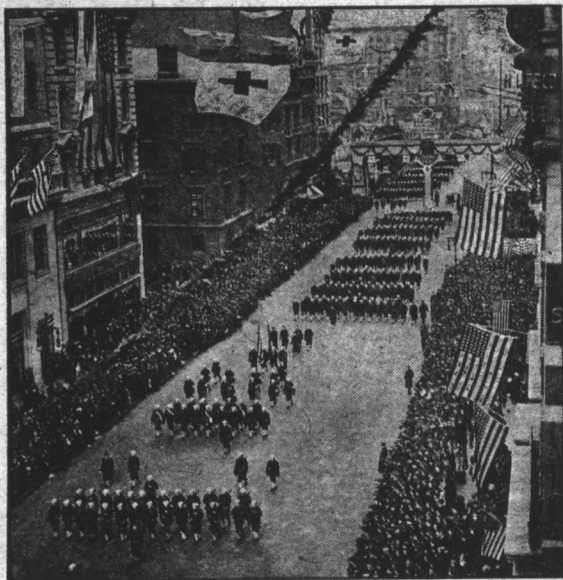
Whom All Blessings Flow," there were one hundred and twenty-nine of them. After dinner everybody went upstairs and heard an excellent patriotic program, which lasted for an hour. That Thanksgiving will be long remembered. And they will remember it all the better for the mud. Mud hath its own delightful qualities.

Last Memorial Day came on a Thursday, I believe. That was the regular night for our Bohemian supper for May. That was also the day that the President had asked us to observe, as a national day of prayer for the Allies. We had our supper, each bringing some dish. Then came a singing school, led by the choir leader. Hymns old and new were sung. In each instance, a few words were spoken, telling of the history of the hymn. Every hymn has a history, and now and again there is one whose story smites like a sword. After we had finished singing school, (Continued on page 58).

WORLD EVENTS IN PICTURES



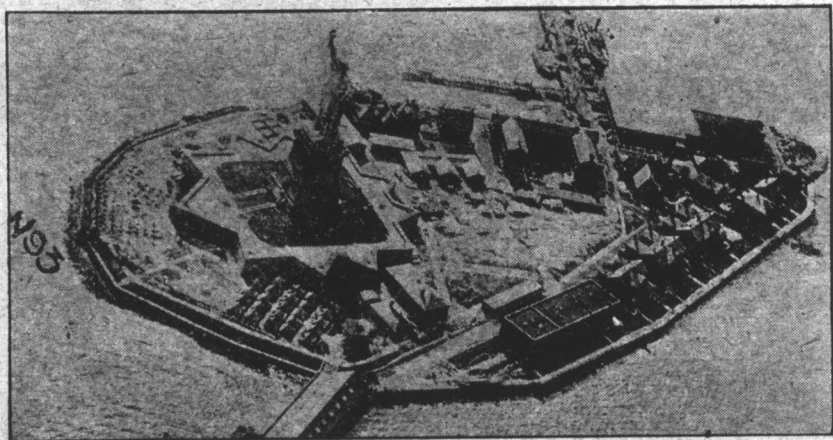
President Wilson and President Poincaré of France.



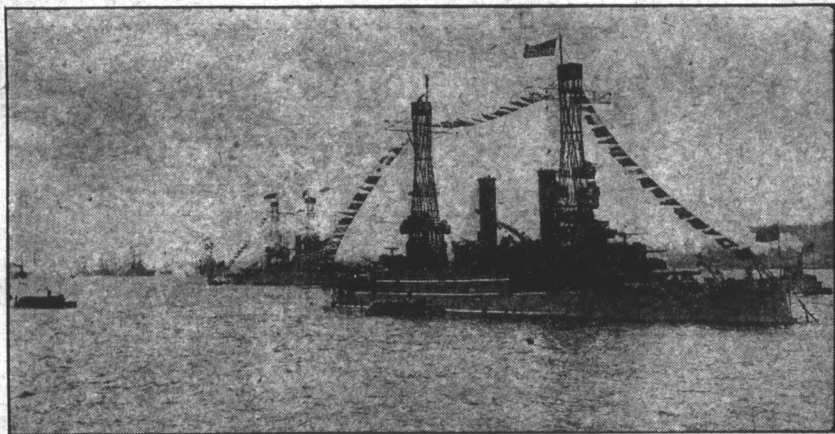
Returned Marines Parading on Fifth Avenue, New York.



Miss Fontrese Refuses Opera Engagement, Aids Red Cross.



Statue of Liberty and Bedloe's Island Viewed from an Airplane.



Returning Fleet is Reviewed in Hudson River by Secretary Daniels.



American Soldiers on Shore Leave in England Sleep in London Law Court.



Socialist Leader Proclaims Germany a Republic Before Reichstag Building.

SHERWIN



THE Sherwin-Williams trade-mark is not only the mark of a product. It is also the symbol of an industry. As a symbol it stands for everything that science, skill and experience can contribute to the making of goods that will best serve your needs.

And one of the things that is vital to the making of goods that will prove to be exactly suited to their purpose is scientific accuracy. There is no guesswork, no half-way measures and no doubtful expedients in manufacturing

SHERWIN-WILLIAMS PRODUCTS

PAINTS AND VARNISHES

**DYESTUFFS, COLORS, PIGMENTS, CHEMICALS, INSECTICIDES,
DISINFECTANTS, WOOD PRESERVATIVES**

WILLIAMS PRODUCTS



*Each Sherwin-Williams Plant
has its own Chemical Laboratories*

*These 20,000 cans hold standard samples to which
each Sherwin-Williams Product must measure up*

No guesswork No half-way methods

IF you spray your trees with Sherwin-Williams Arsenate of Lead, you find that it kills the attacking insects but does not burn the foliage.

If you paint your barns, outhouses and fences with S-W Commonwealth Barn Paint, you find it covers a large surface and stands the weather for a long time.

If you protect your farm machinery with S-W Wagon and Implement Paint you add years to its life and usefulness.

This is always true—not sometimes true. It is true not only of these products, but of all Sherwin-Williams Products. It is to insure this unfailing service that we maintain laboratories manned with skilled chemists wherever we manufacture.

Whether you have a house to paint or a potato crop to protect, an orchard to spray or a chicken house to disinfect, or a use for any Sherwin-Williams Product, our trade-mark means that the product for your purpose has been developed by trained scientists and has passed every laboratory and practical test.

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Sherwin-Williams Products for the Farm

How to use them yourself to get perfect results is told in free book, "The ABC of Home Painting"

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Family Paint
Porch and Deck Paint
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Preservative Shingle Stain
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"Beyond the Frontier"

By RANDALL PARRISH

The Wife of Francois Cassion.

It is vague, all that transpired. I knew then, and recall now, much of the scene yet it returns to memory more in a passing picture than an actual reality in which I was an actor. But one clear impression dominated my brain—my helplessness to resist the command of La Barre. His word was law in the colony, and from it there was no appeal, save to the King. Through swimming mist I saw his face, stern, dark, threatening, and then glimpsed Cassion approaching me, a smile curling his thin lips. I shrank back from him, yet arose to my feet, trembling so that I clung to the chair to keep erect.

"Do not touch me, Monsieur," I said, in a voice which scarcely sounded like my own. Cassion stood still, the smile of triumph leaving his face. La Barre turned, his eyes cold and hard.

"What is this, Mademoiselle? You would dare disobey me?"

I caught my breath, gripping the chair with both hands.

"No, Monsieur le Governor," I answered, surprised at the clearness with which I spoke. "That would be useless; you have behind you the power of France and I am a mere girl. Nor do I appeal, for I know well the cause of your decision. It is indeed my privilege to appeal to Holy Church for protection from this outrage, but not through such representative as I see here."

"Pere le Guard is chaplain to my household."

"And servant to your will, Monsieur. 'Tis known in all New France he is more diplomat than priest. Nay! I take back my word, and will make trial of his priesthood. Father, I do not love this man, nor marry him of my own free will. I appeal to you, and to the church, to refuse the saction."

The priest stood with fingers interlocked, and head bowed, nor did his eyes meet mine.

"I am but the humble instrument of those in authority, daughter," he replied gently, "and must perform the sacred duties of my office. 'Tis your own confession that your hand has pledged to Monsieur Cassion."

"By Hugo Chevet, not myself."

"Without objection on your part." He glanced up slyly. "Perchance this was before the appearance of another lover, Monsieur De Artigny?"

I felt the color flood my cheeks, yet from indignation rather than embarrassment.

"No word of love has been spoken me by Monsieur de Artigny," I answered swiftly. "He is a friend, no more. I do not love Francois Cassion, nor marry him but through force; ay! nor does he love me—this is but a scheme to rob me of my inheritance."

"Enough of this," broke in La Barre sternly, and he gripped my arm. "The girl hath lost her head, and such controversy is unseemly in my presence. Pere le Guard, let the ceremony proceed."

"'Tis your order, Monsieur?"

"Ay! do I not speak my will plainly enough? Come, the hour is late, and our King's business is of more import than the whim of a girl."

I never moved, never lifted my eyes. I was conscious of nothing, but helpless, impotent anger, of voiceless shame. They might force me to go through the form but never would they make me the wife of this man. My heart throbbed with rebellion, my mind hardened into revolt. I knew all that occurred, realized the significance of every word and act, yet it was as if

they appertained to someone else. I felt the clammy touch of Cassion's hand on my nerveless fingers, and I must have answered the interrogatories of the priest, for his voice droned on, meaningless to the end. It was only in the silence which followed that I seemed to regain consciousness, and a new grip on my number faculties. Indeed I was still groping in the fog, bewildered, inert, when La Barre gave utterance to a coarse laugh.

"Congratulations Francois," he cried. "A fair wife, and not so unwilling after all. And now for your first kiss."

The sneer of these words was like a slap in the face, and all the hatred, and indignation I felt seethed to the surface. A heavy paper knife lay on the desk, and I gripped it in my fingers, and stepped back, facing them. The mist seemed to roll away, and I saw their faces, and there must have been that in mine to startle them, for even La Barre gave back a step, and the grin faded from the thin lips of the Commissaire.

"'Tis ended then," I said, and my voice did not falter. "I am this man's wife. Very well, you have had your way; now I will have mine. Listen to what I shall say, Monsieur le Governor, and you also, Francois Cassion. By right of church you call me wife, but that is your only claim. I know your law, and that this ceremony has sealed my lips. I am your captive, nothing more; you can rob me now—but, mark you! all that you will ever get is money. Monsieur Cassion, if you dare lay so much as a finger on me I will kill you, as I would a snake. I know what I say, and mean it. You kiss me! Try it, Monsieur, if you doubt how my race repays insult. I will go with you; I will bear your name; this the law compels, but I am still mistress of my soul, and of my body. You hear me, Messieurs? You understand?"

Cassion stood leaning forward, just where my first words had held him motionless. As I paused his eyes were on my face, and he lifted a hand to wipe away drops of perspiration. La Barre crumpled the paper he held savagely.

"So," he exclaimed, "we have unchained a tiger cat. Well, all this is naught to me; and Francois, I leave you and the wilderness to do the taming. In faith, 'tis time already you were off. You agree to accompany the party without resistance, Madame?"

"As well there, as here," I answered contemptuously.

"And you, Hugo Chevet?"

The giant growled something inarticulate through his beard, not altogether, I thought, to La Barre's liking, for his face darkened.

"By St. Anne! 'tis a happy family amid which you start your honeymoon, Monsieur Cassion," he ejaculated at length, "but go you must, though I send a file of soldiers with you to the boats. Now leave me, and I would hear no more until word comes of your arrival at St. Louis."

We left the room together, the three of us, and no one spoke, as we traversed the great assembly hall, in which dancers still lingered, and gained the outer hall. Cassion secured my cloak, and I wrapped it about my shoulders, for the night air without was already chill, and then, yet in unbroken silence we passed down the steps into the darkness of the street. I walked beside Chevet, who was growling to himself, scarce sober enough to clearly realize what had occurred, and so we followed the Commissaire down the steep path which led to the river.

There was no pomp now, no military

guard, or glazing torches. All about us was gloom and silence, the houses fronting the narrow passage black, although a gleam of fire revealed the surface of the water below. The rough paving made walking difficult, and I tripped twice during the descent, once wrenching an ankle, but with no outcry. I was scarce conscious of the pain, or of my surroundings, for my mind still stood aghast over what had occurred. It had been so swiftly accomplished I yet failed to grasp the full significance.

Vaguely I comprehended that I was no longer Adele la Chesnayne, but the wife of that man I followed. A word, a muttered prayer, an uplifted hand, had made me his slave, his vassal. Nothing could break the bond between us save death. I might hate, despise, revile, but the bond held. This thought grew clearer as my mind readjusted itself, and the full horror of the situation took possession of me. Yet there was nothing I could do; I could neither escape or fight, nor had I a friend to whom I could appeal. Suddenly I realized that I still grasped in my hand the heavy paper knife I had snatched up from La Barre's desk, and I thrust it into the waistband of my skirt. It was my only weapon of defense, yet to know I had even that seemed to bring me a glow of courage.

We reached the river's edge and halted. Below us, on the bank, the blazing fire emitted a red gleam reflecting on the water, and showing us the dark outlines of waiting canoes, and seated figures. Gazing about Cassion broke the silence, his voice assuming the harshness of authority.

"Three canoes! Where is the other? Huh! if there be delay now, someone will make answer to me. Pass the word for the sergeant; ah! is this you Le Claire?"

"All is prepared, Monsieur."

He glared at the stocky figure confronting him in infantry uniform.

"Prepared! You have but three boats at the bank."

"The other is below, Monsieur; it is loaded and waits to lead the way."

"Ah! and who is in charge?"

"Was it not your will that it be the guide—the Sieur de Artigny?"

"Sacre! but I had forgotten the fellow. Ay! 'tis the best place for him. And are all provisions and arms aboard yet? You checked them, Le Claire?"

"With care, Monsieur; I watched the stowing of each piece; there is nothing forgotten."

"And the men?"

"Four Indian paddlers to each boat, Monsieur, twenty soldiers, a priest, and the guide."

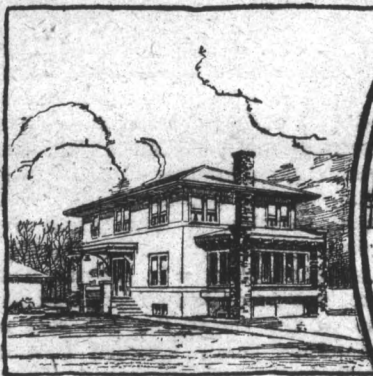
"'Tis the tally. Make room for two more in the large canoe; ay, the lady goes. Change a soldier each to your boat and that of Pere Allouez until we make our first camp, where we can make new arrangement."

"There is room in De Artigny's canoe."

"We'll not call him back; the fellows will tuck away somehow. Come, let's be off, it looks like dawn over yonder."

I found myself in one of the canoes, so filled with men any movement was almost impossible, yet of this I did not complain for my Uncle Chevet was next to me, and Cassion took place at the steering oar in the stern. To be separated from him was all I asked, although the very sound of his harsh voice rasping out orders, as we swung out from the bank rendered me almost frantic. My husband! God! and I was actually married to that despicable creature! I think I hardly realized be-

(Continued on page 56).



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"Beyond the Frontier"

(Continued from page 54).

fore what had occurred, but now the hideous truth came, and I buried my face in my hands, and felt tears stealing through my fingers.

Yet only for a moment were these tears of weakness. Indignation, anger, hatred conquered me. He had won! he had used power to conquer! Very well, now he would pay the price. He thought me a helpless girl; he would find me a woman and a La Chesnayne. The tears left my eyes, and my head lifted with determination, as purpose and decision returned.

We were skirting the northern bank, the high bluffs blotting out the stars, with here and there, far up above us, a light gleaming from some distant window, its rays reflecting along the black water. The Indian paddlers worked silently, driving the sharp prow of the heavily laden canoe steadily up stream. Farther out to the left was the dim outline of another boat, keeping pace with ours, the moving figures of the paddlers revealed against the water beyond.

I endeavored to discern the canoe which led the way, over which De Artigny held command, but it was hidden by a wall of mist too far away to be visible. Yet the very thought that the young Sieur was there, accompanying us into the drear wilderness, preserved me from utter despair. I would not be alone, or friendless. Even when he learned the truth, he would know it was not my fault, and though he might question, and even doubt, at first, yet surely the opportunity would come for me to confess all, and feel his sympathy and protection. I cannot explain the confidence which this certainty of his presence brought or how gratefully I awaited the dawn, and its revelation.

'Tis not in the spirit of youth to be long depressed by misfortune, and although each echo of Cassion's voice recalled my condition, I was not indifferent to the changing scene. Chevet, still sodden with drink, fell asleep, his head on his pack, but I remained wide awake, watching the first gleam of light along the edge of the cloud which stretched across the eastern sky line. It was a dull, drear morning, everywhere a dull gray, the wide waters about us silent and deserted. To the right the shore line was desolate and bare, except for blackened stumps of fire-devastated woods, and brown rocks while in every other direction the river spread wide in sullen flow. There was no sound but the dip of the paddles and the heavy breathing.

As the sun forced its way through the obscuring cloud, the mist rose slowly, and drifted aside, giving me glimpse of the canoe in advance, although it remained indistinct, a vague speck in the waste of water. I sat motionless gazing about at the scene, yet vaguely comprehending the nature of our surroundings. My mind reviewed all the strange events of the past night, and endeavored to adjust itself to my new environment. Almost in an instant of time my life had utterly changed—I had been married and exiled; wedded to a man whom I despised, and forced to accompany him into the unknown wilderness. It was like a dream, a delirium of fever, and even yet I could not seem to comprehend its dread reality. But the speeding canoes, strange faces, the occasional sound of Cassion's voice, the slumbering figure of Chevet was evidence of truth not to be ignored, and ahead yonder, a mere outline, was the boat which contained De Artigny. What would he say, or do, when he learned the truth? Would he care greatly? Had I read rightly the message of his eyes? Could I have trust, and confidence in his loyalty? Would he accept my explanation! or would he condemn me for this act in which I was in no wise to blame? Mother of God! it came to me that it was not so much Monsieur Cassion I

feared, as the Sieur de Artigny. What would be his verdict? My heart seemed to stop its beating, and tears dimmed my eyes, as I gazed across the water at that distant canoe. I knew then that all my courage, all my hope, centered on his decision—the decision of the man I loved.

CHAPTER VII.

The Two Men Meet.

I COULD not have slept, although I must have lost consciousness of our surroundings, for I was aroused by Cassion's voice shouting some command, and became aware that we were making landing on the river bank. The sun was two hours high, and the spot selected a low grass-covered point, shaded by trees. Chevet had awakened, sobered by his nap, and the advance canoe had already been drawn up on the shore, the few soldiers it contained busily engaged in starting fires with which to cook our morning meal.

I perceived De Artigny with my first glance, standing erect on the bank, his back toward us, directing the men in their work. As we shot forward toward the landing he turned indifferently, and I marked the sudden straightening of his body, as though in surprise, although the distance gave me no clear vision of his face. As our canoe came into the shallows, he sprang down the bank to greet us, hat in hand, his eyes on me. My own glance fell before the eagerness in his face, and I turned away.

"Ah! Monsieur Cassion," he exclaimed, the very sound of his voice evidencing delight. "You have guests on the journey; 'tis unexpected."

Cassion stepped over the side, and fronted him, no longer a smiling gallant of the court, but brutal in authority.

"And what is that to you, may I ask, Sieur de Artigny?" he said, coldly contemptuous. "You are but our guide, and it is no concern of yours who may compose the company. 'Twill be well for you to remember your place, and attend to your duties. Go now, and see that the men have breakfast served them."

There was a moment of silence, and I did not even venture to glance up to perceive what occurred, although I felt that De Artigny's eyes shifted their inquiry from Cassion's face to mine. There must be no quarrel now, not until he knew the truth, not until I had opportunity to explain, and yet he was a firebrand, and it would be like him to resent such words. How relieved I felt, as his voice made final answer.

"Pardon, Monsieur le Commissaire," he said, pleasantly enough. "It is true I forgot my place in this moment of surprise. I obey your orders."

I looked up as he turned away, and disappeared. Cassion stared after him, smothering an oath, and evidently disappointed at so tame an ending of the affair, for it was his nature to bluster and boast. Yet as his lips changed to a grin, I knew of what the man was thinking—he had mistaken De Artigny's actions for cowardice, and felt assured now of how he would deal with him. He turned to the canoe, a new conception of importance in the sharp tone of his voice.

"Come ashore, men; ay! draw the boat higher on the sand. Now, Monsieur Chevet, assist your niece forward to where I can help her to land with dry feet—permit me, Adele."

"It is not at all necessary, Monsieur," I replied, avoiding his hand, and leaping lightly to the firm sand. "I am no dainty maid of Quebec to whom such courtesy is due." I stood and faced him, not displeased to mark the anger in his eyes. "Not always have you shown yourself so considerate."

(Continued next week.)

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"By the Way"

"IT MIGHT HAVE BEEN."

After applying scientific methods in testing his flock for egg capacity, a friend of ours arrived at the following conclusions:

"My rooster's dainty pelvic bones
Are fifteen fingers wide,
And when he stands within the door
It's filled from side to side.

Prepotency's his middle name,
Five hundred eggs his score;
His abdominal longitude
Is half a yard or more.

Of course he never laid those eggs;
That idea is absurd.
His chart shows what he would have
laid
Were he a lady bird."

TAKE YOUR CHOICE.

Two dusky sons of Alabama were standing outside the village store discussing the war. Rastus had received his call to report under the draft; Sambo had not.

"Well, I tells you," bragged Sambo, "the United States government can't make this nigger fight."

Rastus was thoughtful. "Maybe not, Sambo; maybe not; but they can take you to where the fightin' is goin' on and you kin use your own judgment."

At a country inn a number of farmers were discussing the potato pests. "They ate my whole crop of potatoes in a single week," said one.

"They ate my whole crop in two days and then sat round on the trees and waited for me to plant more," said another.

"Well," put in a commercial traveler for a seed merchant, "that may be, but I'll tell you what I saw in our warehouse once. I saw four or five beetles examining the books a week before planting time to see who had bought seed."

The teacher was hearing the class in nature. Trying to impress upon the children's minds the horror of cruelty to animals she told the following story.

"Once a farmer went out to milk a cow and a little calf switched the man in the eye with its tail. The man took out his knife and cut off the calf's tail. Now, children, what verse in the Bible should that man have remembered?"

Of course she had reference to "Blessed are the merciful," but Phillip had another answer:

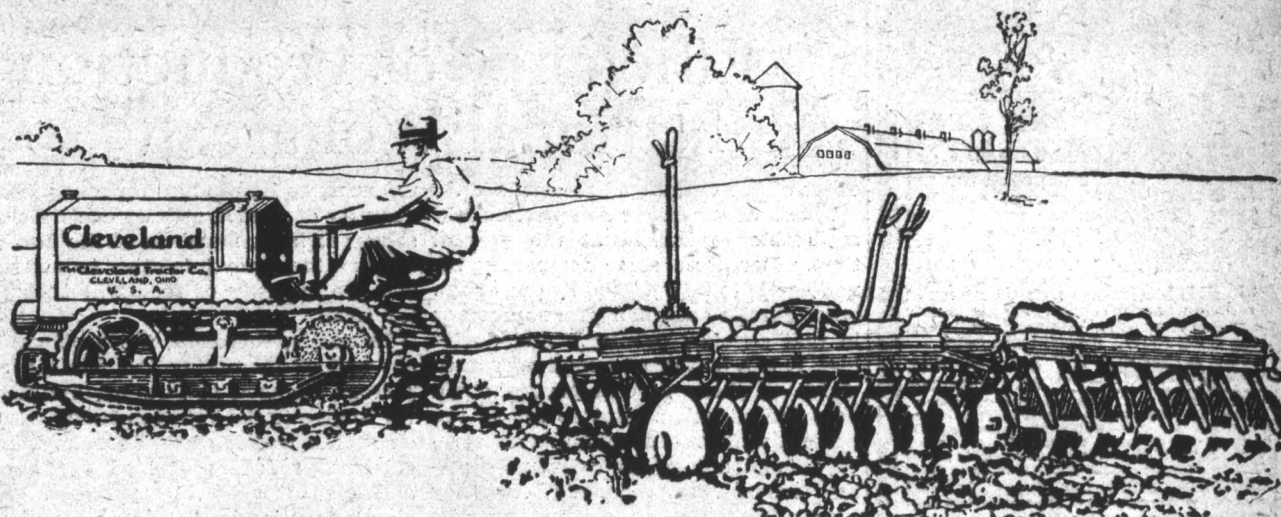
"Whom God hath joined together, let no man put asunder."

WHAT IS "PEP?"

It's the thing which makes the lamb gambol with glee, the colts prance with joy, the calves throw up their tails and run like fury, the birds sing in split-throat notes, the frogs croak upon the creek bank, the insects buzz and hum in the air, the milkman whistle as he jogs along, the blacksmith laughingly beat the iron into shape, the plowman urge his horses with a "gee-up, there," the engineer wave a kiss to his sweetheart as he throws open the throttle, the woodman smilingly plunge his axe into the giant tree, the banker and merchant rush to their work with a cheery "bye-bye," the mechanic and laborer fairly dance to their jobs, the soldier "go over the top," with clinched jaws and courage that knows no fear, the live salesman hie to his calls with shoulders squared, pride in his heart, and nerves a-tingle with anticipation of new success.

Oh, "pep" is anything that puts happiness in the heart, energy in the body, determination in the soul, and invisible courage in the will.

Cleveland Tractor



The Cleveland Tractor does more than plow

Your tractor, to be of real service and value to you, must do more than simply draw a plow. Plowing is only the beginning of what a tractor should be able to do.

It should also be able to do everything else in the preparation of the seed bed—the discing and harrowing, the planting. And it should do these things in a way that will not injure the coming crop.

The tractor should not only be able to draw the implement easily, but it should not spoil the good work the implement has done.

After the ground is broken, The Cleveland Tractor goes over it with the disc and the harrow, then goes over it with the seeder.

The Cleveland rides on top of the seed bed; it does not sink into it and it does not pack the soil.

The Cleveland goes over soft ground because it travels on its own endless tracks which it picks up and lays down as it goes along.

These tracks have about 600 square inches of traction surface, so the pressure on the ground is only about five

pounds to the square inch—therefore there is not enough weight on the ground at any one point to inflict damage.

We repeat, The Cleveland Tractor rides on top of the seed bed. It does not sink into it; therefore it does not have to wade or wallow through it.

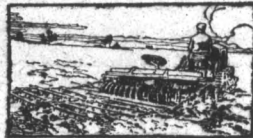
And because it does not sink in, it does not have to push the dirt in front of it and pack it down in order to navigate.

And because it is not obliged to push the earth in front of it and pack it down, the greatest possible amount of The Cleveland's power is available for accomplishing the work it has to do.

This is one of the reasons why The Cleveland performs so much work on such a small amount of kerosene.

These are but a few of The Cleveland Tractor's many advantages. It is capable of performing almost endless tasks in both tractive and stationary engine work.

The Cleveland does its work. It does it well. It keeps on doing it. It is the tractor that does the work you want a tractor to do, in the way you want it done.



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Wildwood Farms, Orion, Michigan
W. E. SCRIPPS, Proprietor.

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Efficiency of Production Essential to National Welfare. (Continued from page 38)

other of the exchanged commodities. These observations are particularly applicable to Russia at the present time. Doubtless some temporary advantage is to be obtained by one or the other parties contending for supremacy in that stricken country. And doubtless, it is a matter of some importance which of these several parties dominate the situation. But so far as the general welfare of mankind is concerned, this advantage can only be temporary unless the economic efficiency among Russians is in some manner increased.

People often wonder why if improvements are made the cost of living does not decrease. If the processes just described go on so that the proper relation exists between people engaged in several industries, the exchange value of the different articles produced does not necessarily change. Although, of course, they often do change chiefly perhaps due to changes in quantity of money and instruments of credits. But what necessarily does occur is that such persons have more goods and, therefore, are entitled to more in exchange for them. Under such conditions more commodities and services are exchanged and if these services and commodities continue to be measured by the same standard of money, then the cost of living expressed in money will rise. In other words, an increased exchange of commodities is a factor to be sought and represents progress.

What about service? If additional services are secured by increasing the number of persons employed without increasing their efficiency, the value of these services is not increased and hence the compensation can not be greater. If the amount of service rendered is increased beyond certain limits the time must come when there are too many people to be supplied with commodities. The only way, therefore, that salaries can be properly increased is by making the services more effective. For example, if a store, factory or educational institution employs one thousand persons when the work might be done by employing eight hundred more efficient persons, each of the one thousand persons must receive less because (1) more commodities must be distributed among the thousand persons that the eight hundred persons, and (2) two hundred persons have been withdrawn from those industries which produced the commodities these employees need.

In the distribution of goods there has always been and still continue to be, inequalities which are unjust, if not criminal in character. If, however, in trying to rectify these injustices the much greater and more fundamental question of efficiency or production is overlooked, the world will go backward and not forward. If this point of view is accepted as sound then it follows that the general welfare and the comforts of country life are not to be promoted by increasing the number of farmers but by increasing the output of each family. As is well known, this has been the line of progress in agriculture during the last one hundred years.

Doubtless some temporary advantage can come to a city or even a state by obtaining much greater production through an increased number of farmers but this advantage can only be temporary, for if the farm family fails

to exchange its produce for an equable quantity of needed articles or services, sooner or later, members of the family will find their way into other industries and the quantity of food will become too small.

Primarily, therefore, the problem is not one of increasing the number of persons engaged in farming, but it is (1) to give to the young men and women such a training as will make them efficient producers of food or fibers, and (2) to make this potential efficiency function by the development of wise state, national and even international agricultural policies. The products of the farm both in the United States and the countries of our principal allies have had probably a greater exchange value during the war, especially during the past two years. Certain it is that the farm family taken as a whole, has had more to exchange for other commodities and equally certain that that same family has worked harder, more efficiently and therefore entitled to this greater return.

If history repeats itself this much needed and deserved prosperity for the farmers will continue for some years to come. How many years, perhaps no one is wise enough to predict accurately. The main thing to understand, however, is that if permanent benefit is to come from this increased prosperity, it must be by obtaining more products per family and not by increasing the number of farm families. Or, perhaps it is better to say that if the number of farm families are increased in order to maintain the proper relation between country and city improvements in social welfare can only result in case the efficiency of these families is increased or at least maintained. This is only another way of saying that there can not be a permanently satisfactory social order until families which produce the food and raw materials for clothing and shelter, can exchange their products for enough commodities to enable them to rear and educate self-respecting families.

In this article emphasis, perhaps undue emphasis, has been placed upon the general welfare as distinct from the individual or class welfare. It is true unfortunately, that it is to the economic advantage of the people of every industry that the income of their class be high, while that of all other industries is low. Everyone wishes to sell in a high market and buy in a low market, whether he sells or buys commodities or services. It is therefore, very true that if anything of special importance is to be done for the farmers as a class, it will have to be done by the farmers themselves.

It is easy for a city man to comprehend the importance of increasing the quantity of food in order that he may live off the "fat of the land," but he is altogether too apt to assert, as I have often heard it asserted, that the way for the farmer to "get by" is to save waste and spend less, when he himself would not do the same work for double the compensation.

The farmers themselves have not been altogether guiltless in favoring policies which produce low prices. Two outstanding reasons for low prices of food during the past fifty years have been:

1. The rise in value of land.
2. Cheap farm labor.

The farmer was not only willing to work for low wages because he would be recompensed by the rise in the val-

ue of his land, but he was induced to favor every policy which would tend to increase the value of his land. The real estate agent and the land owner thus had interests in common.

One of the factors which tends to increase the price of land is cheap labor. It so happens, however, that three-fourths of the labor on the farms of the United States is done by the farmers or their families. Their labor income was cheapened by the labor of the other fourth. But so long as a man was a land owner he was recompensed by the value of the land. Tenants did not come in for any of this benefit. In the case of tenants the benefits went to non-resident land owners. Thus instead of helping to build homes, schools, churches and highways in the local community it was used elsewhere in a more or less greater degree.

These things will right themselves as more dependence must be put upon the products sold as a source of wealth and as farm labor reaches an equality with other labor. When the daughter can earn a greater wage in running a milking machine in her father's dairy than she can in running a typewriter in the city, she will be more apt to marry a country boy. When the son can make more money running a farm tractor than a street car, he will be less likely to bring his wife to town.

In the past nations and races have thriven through the exploitation of other nations and races. Classes have thriven through the exploitation of other classes. It is altogether too much to expect that such ideals, much less such practices, will cease altogether.

I write as President Wilson is being made a citizen of France. This world waits in breathless anticipation for the results of the peace conference. The future agricultural policies of the United States must be predicated upon these issues. In the meantime, only the most fundamental principles may be stated.

SPECIAL DAYS AT THE COMMUNITY CHURCH.

(Continued from page 51).

we had prayer, in behalf of the American forces and of the mighty cause of justice and truth which the Allied cause represented.

Watch-night can be used to good advantage, always. It need not be the soporific affair that it so frequently is. It may be bright and lively right up to the happy New Year. A stereopticon lecture, the telling of a story such as "The Man Without a Country," or "The Man Who Was Too Busy to Find the Child," followed by singing, will make an evening that will be more than worth while. A cantata by the choir may well have a place on the program, or the Sacrament of the Lord's Supper, just as the old year is slipping away.

The church has often failed to observe the great festival days. And in thus failing, she has lost much, the people have lost much, and the entire community has suffered. There is a world of meaning in these anniversaries, else they would have been forgotten long ago.

We conduct what we call Visitation Day, here, once a year—but that is another story.

The fellow who boasts of his ancestors is like a potato plant—the best part of which is underground.

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Everybody is speeding up production. On the American farm and in American factories the growing of food crops and the manufacture of necessities must go forward to help feed the world and replace war's destruction. Years of prosperity are ahead for all those who produce necessities. Use Galloway's low-priced, direct-from-factory, labor-saving implements. Produce bumper crops and get your share of the world's greatest prosperity. Galloway's factories have resumed peace-time production and are making quick peace-time deliveries.

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New 1919 Improved models! Absolutely sanitary—strong, durable and wonderfully simple! Has latest 1919 improvements. Over 4000 brand new 1919 models ready for quick delivery. Skins close. Easy to run and clean. All working parts run in oil spray. Every drop of milk gets full skimming force of the bowl. 90 days working trial on your farm will prove everything I say is so. Compare the Galloway side by side with other machines—the highest priced ones you know—and see how it outshines them. Choice 375 pounds—500 pounds—750 pounds or 100 pound skimming capacity per hour.

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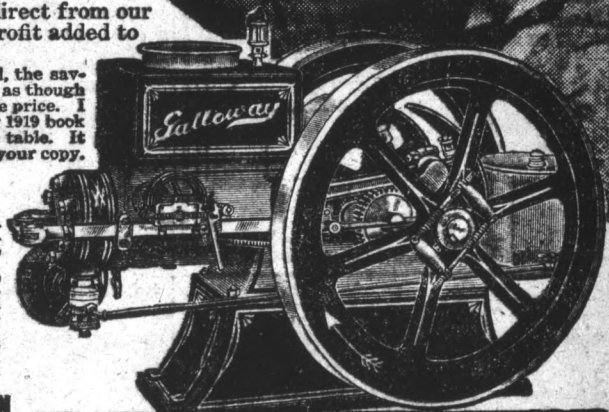
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Brighter than the brightest electric bulb. More light than 20 oil lanterns. Cheapest and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lantern. The



Coleman Quick-Lite

No wicks to trim—No globes to wash. No dirt or grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger if tipped over. Guaranteed Five Years—will last a lifetime.

If your dealer can't supply, address our nearest office for Catalog No. 29

The Coleman Lamp Co.
Wichita, St. Paul, Toledo,
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CLOVER AT WHOLESALE

We save you money. Buy now before advance. Crop short. We expect higher prices. Don't miss it. We specialize on Guaranteed Quality, Tested Clover, Timothy, Alfalfa, Sweet Clover and Alsike; sold subject to your approval and government test. Write today for samples, special prices and big Profit-Sharing Seed Guide. American Mutual Seed Co., Dept. 131 Chicago, Illinois

Mention the Michigan Farmer when writing Advertisers

"To Love and to Labor is the Sum of Living"—Moore

WOMEN'S SECTION



The Old Folks' "Place in the Sun"

WE are all seeing all sorts of things that will grow out of the war. A new civilization is to be born, we are assured, and if we are to believe all we read, every wrong will be righted and peace and justice will rule on earth. All the problems which distressed us prior to 1914, and even up to this writing, are to be solved, and no class is to have any cause for complaint.

Be that as it may, undoubtedly there will be a change in several directions, and a few of our problems will no doubt be solved. We all see the solution of a few of them, and perhaps the most marked one to be seen settling itself just now is the problem of what we shall do with our aged. It is not so very long ago that a doctor made himself famous, or notorious, by advocating the chloroforming of all men when they reached the age of sixty years. Employers set him the example by retiring their help with a pension at ages running from sixty years to seventy-two years, and the wild clamor for "young blood" was heard in all lines of business.

There didn't seem to be any place for old folks, male or female. Nobody wanted them in business, and at home young folks were inclined to think dependent parents or grandparents, uncles and aunts very much of a nuisance. They were shelved, left without anything to do to fill mind or hands, and of course they became a burden to themselves and everyone else. Sons and daughters, filled with a false pride, refused to let mother and father do any sort of work to earn a penny from others, and then grumbled because they had the old folks "on their hands."

The problem of the aged had become rather acute. And then came the war. As in everything else, the cry was for "young blood." It was our boys with their splendid strength and great powers of endurance who had to go across. Millions of places which they had filled were left vacant and must be filled. Girls sprang forward to take the place of the boys, but still there was room. There didn't seem to be girls enough

to fill the places left by the young men and then there were great gaps where the girls had been which must be stopped up by someone.

The problem of the aged solved itself. The old men could not go to war; the old women could not exactly take the places left vacant by the young, strong girls, but they could do their bit, and a big bit, towards making up the deficiency. Employers, glad to get any sort of help, began hiring old men to do certain forms of light work which they had hired girls to do before. For the most part they were openly delighted with the change. One man, a job printer, declares he will never hire girls again; he'll stick to his old men.

"Girls are flighty," was his reason. "You were changing every month or so and while you have them they are bobbing about the office instead of sticking right at their job. They spend too much time peeping into vanity cases

and powdering their noses and polishing their engagement rings. Now my old men are past vanity and love-making. They stick right to business and if they aren't so swift they get more done by pegging along all day."

In the kitchen, too, a change has come about. Women who always insisted on having young, strong girl helpers, found out, when they couldn't get the girls, that a middle-aged, or elderly woman can help a great deal. And sons who wouldn't let mother work in anyone's kitchen before the war, called it war work, and gave their consent to mother's earning a little for "thrifty stamps." And if thrifty mother manages to make her money buy her shoes and stockings as well as a few stamps, why there is no harm done.

One old lady started out mending at fifteen cents an hour. John thought that was all right, sewing was a genteel occupation. Mother got started, but fifteen cents was too little for her. She yearned for twenty-five cents. Her employer would be glad to pay that to anyone who would wash her dishes and straighten up her rooms each morning and mother couldn't see that washing dishes was any more lowering to her dignity than darning yawning holes in stockings. So she just commenced to wash dishes without consulting John. Earnings grew into a dollar a day instead of fifty or sixty cents, and when the fourth Liberty Loan campaign was on she astonished John by pinning a slip proclaiming herself a bond owner in her window, and flourishing a paid-up bond under John's nose. She had solved her problem of being old very satisfactorily, especially as three or four women are bidding for her services.

The problem of the aged would cease to perplex if we would only recognize that useful, remunerative occupation is a blessing, not a curse nor disgrace, and that speed is not the only thing to be desired in employees. Age may lack speed and endurance, but it has judgment and experience which surely are as valuable an asset as anything the young can offer.

DEBORAH.

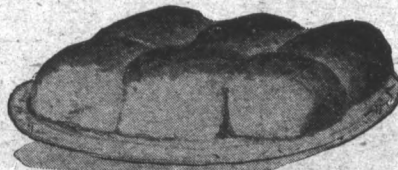


Tan velour makes this warm coat; the snug collar is of beaver plush. Velour was also used for the tam. With warm leggings to match the coat, the little girl is ready to defy the winter cold.

Substantial Supper Dishes

By--E. E. Rockwood

red or green peppers. Serve alone or on toast.



Biscuits with Cheese Dressing.

Make a white sauce and in it melt a cupful of cheese cut in small pieces. Open the biscuit as above and pour the cheese mixture over them. This is a hearty dish and very good to taste. Serve hot.

A few hard boiled eggs, a small can of tuna, or dried beef added to the cream sauce furnishes a pleasing variation to the biscuit dish.

Salmon with Hot Biscuits.

Bake a tin of baking powder or buttermilk biscuits, using one's favorite recipe. Remove salmon from the can,

free it from bones and skin and add it to a rich milk gravy or white sauce made quite thick. Break the fish into suitable sized pieces for serving. Open the biscuit and arrange on a platter, then cover with the hot gravy and fish. The biscuits may be buttered, but if the gravy is rich enough, this will not be necessary.

Egg Scallop.

Boil for ten minutes one or more eggs for each person, and remove the shells. In a baking dish or shallow basin put a layer of bread crumbs, then one of very thick white sauce or cream gravy well seasoned with butter, pepper and salt. On this put a layer of sliced eggs, sprinkle with salt and pepper, then cover with more bread crumbs and the white sauce, alternating according to quantity and the size of baking dish, having the top layer of fine bread crumbs moistened with melted butter or butter substitute if desired. Bake until the top is brown and serve hot. This disposes of bread crumbs which are bound to accumu-

late, no matter how careful the cook may be.

Macaroni Italiane.

Boil the macaroni or spaghetti in salted water until tender, then rinse in cold water to prevent adhering. Have ready a cup of strained tomatoes and use in alternate layers in a baking dish with the macaroni. Cover with buttered crumbs and bake until brown, or the dish may be served plain covered with the hot tomato which is thick enough to cover it nicely.

Salmon Loaf.

Salmon is expensive compared to former prices, yet a thirty-cent can will make the meat dish for six. Mix the fish with one cup of bread crumbs, one egg and sweet milk to moisten well, probably about one cupful. Season with salt and pepper, press into a greased baking tin, dot with bits of butter and bake slowly until the top browns, about thirty or forty minutes. Turn out and serve hot with the ever-useful white sauce.

Bean Loaf.

Mash slightly one pint of left-over beans. Add one egg, one tablespoon of minced onion, one cup of cold boiled rice, salt and pepper to suit, a little tomato catsup also if desired. Shape into a loaf, put thin slices of bacon or salt pork on top and bake for half an hour. If there is neither bacon or pork at hand, use bits of butter for the top. This is nice served with tomato juice thickened with cornstarch and well seasoned with butter, pepper and salt.

Goulash.

One-half pound of round steak cut in inch pieces and put in a baking dish. Over this sprinkle salt and pepper to taste, then a layer of raw sliced potatoes. Follow with a layer of cooked rice, macaroni or spaghetti. Salt and pepper each layer lightly, then cover with cooked tomatoes and bake in a covered baking dish for one and one-half hours. If it gets too dry in baking add a little hot water.

SHORT CUTS TO HOUSEKEEPING.

Ten cents worth of camphor gum, one pint of gasoline mixed is one of the best things for chilblains.—Miss Z. I. D.

In preparing grapefruit for the table, if it is rolled, as one rolls a lemon, the fruit is more juicy and the pulp is loosened, giving a better flavor.—Mrs. J. J. O'C.

When baking apples try my way: Run the corer only part way through. Into this little cup place the sugar, spice and a little butter, and they will cook into and flavor the whole apple. The fruit will also keep in shape better than when the entire core is taken out.—M. A. P.

Use a bean pot to bake your apple sauce by cooking as you would on top of the stove, only do not sweeten until done, then add sugar and spice while hot. The flavor is delicious thus baked. All dried fruits are improved by this mode of cooking.—Mrs. J. J. O'C.

Who has not opened their cream separator in winter to find from one to three spoons of cream sticking to the parts and thereby wasted? I did, until I evolved this for myself and would like to pass it on to the readers of the Michigan Farmer, if any have that trouble: After the machine is in motion turn through a generous half-cup of boiling water and follow immediately with the milk; then, if water instead of skim-milk is used to flush the bowl, have it a little warmer than fresh milk instead of cold, as in warm weather. Warming the cones, etc., before screwing the bowl together, also helps.—E. A. S.

Compared with other animals, the domestic fowl is a small unit, but wide distribution and large numbers make it very important that we maintain this branch of our national food supply during the coming reconstruction period. Eggs, like milk, form an important part of our national diet that cannot well be replaced with substitutes.

Good News For The Housewife

Wartime Flour is a relic of the past!

Delicious, Nutritious, Wholesome White Bread is again on the menu.

How good it tastes!

And how easy it is to make good bread from good flour compared with the effort required to produce just ordinary bread from War Flour.

Of course, we were all perfectly willing to use war flour as a wartime necessity. It helped our boys over there gain the Glorious Victory.

But everybody is delighted to have it all over and mighty proud of the amazing record our own precious America has made.

It is also good news to the particular housewife to know she may again obtain the good old-fashioned, high quality

Lily White

"The flour the best cooks use"

for no better flour has ever been made or sold than LILY WHITE.

No flour has ever given the housewife better satisfaction for either bread or pastry baking than LILY WHITE.

There have been mighty few flours that even equalled it.

We are making LILY WHITE in the same old way, exercising just as much care in the selection of grain, being just as particular to see that exactly the right blend of the different varieties of wheat is secured to produce the best flour it is possible to mill.

Your Dealer will cheerfully refund the purchase price if you do not like LILY WHITE FLOUR as well OR BETTER than any flour you have ever used for either bread or pastry baking; in other words, if LILY WHITE does not completely satisfy you for every requirement of home use.

Be certain to specify you do not want war flour, but the real old time high quality LILY WHITE FLOUR now on sale.

VALLEY CITY MILLING CO.
GRAND RAPIDS, MICH.

SAFEGUARD YOURSELF BY KEEPING RECORDS

If you don't, the tax man will figure your income tax in his own way. But don't keep incomplete records of your income and expenditures. It gets you in bad with the Income Tax Collector, and may cost you money in increased taxes. Well-kept records will not be disputed. It is easy to keep accurate records by using

The Michigan Farmer Account Book

This book requires no special book-keeping knowledge, but provides for a complete record of all transactions, such as receipts and expenditures, interest, breeding, and planting dates, complete farm inventory, and all other daily information; complete summary of Income Tax Law; and other essential information.

A few minutes a day will provide a record that will be acceptable to the Tax Collector, and valuable, too, because of the interesting information it gives you.

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Please Mention The Michigan Farmer When Writing to Advertisers



Our Boys and Girls

At Work and play



When the "Flu" Lets Up Watch Out

By J. H. Brown

The boys and girls in the junior agricultural clubs of Calhoun county were disappointed because they could not hold their annual exhibition and banquet on December 21, as planned. They had looked ahead to having another fine and enjoyable gathering at Marshall, the county seat, as has been the rule for several years past. Influenza was to blame for the postponement.

The postponement was thought advisable by the new county Y. M. C. A. secretary, of Leland, Mrs. Lucia Converse, and others in charge of the work of the clubs. The exhibit was held at the office of the county agent and the awards made.

The accompanying picture we took showing the exhibit of the clubs last winter. E. C. Ackley, former county secretary, stands on the right side inspecting the corn display. In front of him is the Kellogg corn trophy, which was won by the Community Club. We presented a picture of this club in the Michigan Farmer some time ago.

The center table contains the potato display, and F. C. Lindeman is inspecting the tubers. Mr. Lindeman is well known to every reader of this paper as the state director of the junior agricul-



Corn, Potato and Baking Exhibits of the Calhoun County Clubs.

tural clubs of Michigan. He is now abroad in war work and this picture, showing him at some of his old tricks in instructing boys how to make things grow, will interest every reader who has been connected with Mr. Lindeman and the work of the hundreds of clubs in Michigan.

On the front end of the potato table is the large silver table cup we presented in the name of our home pa-

pers, the Morning Enquirer and Evening News, to the winner in the potato growing contest. It so happened that last year the Community Club of Burlington township, Calhoun county, won both cups shown on the tables, also the fine banner. The leading clubs last year and this winter are the Community, Cobblestone, of Pennfield township, and Stanley, of Emmet township.

At the left is the display in the bak-

ing contest. Miss Anna Cowles, state director of girls' work in the clubs, is shown instructing one of the young girls in some of the points of making good bread. Miss Cowles has been a universal favorite in club work everywhere and is a high-grade instructor and judge in her department.

Along the wall in the rear is a portion of the needlework display and some of the canned fruit and vegetables. Back of the writer while he was taking this picture, stood the crowd of boys and girls in attendance at the exhibit. Nearly everyone was a contestant, and they all wanted their pictures taken in group.

So we went out on the front steps and took the picture shown herewith. They are a fine bunch of good lookers, both male and female, and they are also holders of Liberty Bonds and War Savings Stamps. Smiling for all he is worth, stands chief magician E. C. Lindeman on the right side of the entrance. Miss Cowles is in the center of the doorway. County Secretary C. E. Ackley, with his fur cap helmet on, stands in front of the right hand window, and his presence had already affected the frost on the glass, although the mercury was close to zero outside.

The Market Wagon

By Hilda Richmond

TEN congenial classmates determined to earn more money than the average lad of thirteen can get for his Saturday's time, so they started a little scheme or plan called "The Market Wagon." One of the boys could get a large one-horse wagon and it was easy to "rent" an old horse so the outfit was soon in order. Very early on Saturday the boys assembled with a lunch for each and some corn for the horse, and then they set out for the country to get supplies for their trade.

As the season varied the tasks varied. Early in the fall they picked peaches and pears on shares, taking their pay in fruit. Later they picked apples and grapes. Ten boys can strip a tree or a number of trees in short order, so many of the busy farmers welcomed them. Often they received a hot dish at dinner to help out their cold food, the good ladies roasting potatoes for them or putting on a big kettle of green corn. By night the old wagon would be loaded with supplies ranging from vegetables to corn. On Monday evening the supplies would be sold unless some of the things were engaged and were delivered by hand on Saturday evening. All worked together and everything went into the common purse.

Very often the boys would buy up fresh eggs for particular customers, getting a small commission on each dozen, and there were often special orders for vegetables and even flowers. Once the boys devoted a great part of a day to getting supplies for a Harvest Home Festival for a church and for

these things they received ten dollars in addition to the other things they brought in. They had vegetables and grains and pumpkins and fodder and fruits and grasses and flowers and all the lovely things the country affords. Sometimes they gathered nuts for sale and sometimes they husked corn for a farmer, taking their pay in corn which they sold in town.

Of course, it was possible to wear out old clothes and shoes on the Saturday trip and this was an item to the parents as well as the fact that the boys learned a great deal about busi-

ness in their little transactions. They even went so far as to ship a few of the best things to people in the city that they knew, getting fancy prices for their bargains. But the best of all was the training they received in dealing fairly with each other and with the public. One shirk could have spoiled it all or one boy who was anxious to cheat a little in the produce, but they all worked together honestly and fair-

ly with the "market wagon" for several seasons. They earned much more than they could have had at any other occupation and the experience was worth very much to them later in life. The old market wagon has fallen to pieces and the boys are out in the busy world but they still laugh over the good times they had in those happy days, and they are grateful to that training for much of their present success and happiness.

Club News Items

FRANCE TO HAVE BOYS' AND GIRLS' CLUBS.

FRANCE is considering the adoption of Uncle Sam's methods of teaching better farming and home-making to boys and girls. Representatives from

the French High Commission, lately in this country, made a point of studying carefully the methods of the Federal Department of Agriculture and the state agricultural colleges in conducting boys' and girls' clubs. Much of the information thus collected has been widely reprinted by the French press, accompanied by editorial comment expressing the view that the man and woman power of France having been depleted or disorganized by war service, France for some time to come will be dependent in large part upon its younger population for its food supply and suggesting the formation in France of a nation-wide system of boys' and girls' clubs patterned on those in America. It is expected that these clubs will grow staple products—garden produce, wool, farm grain and forage crops, poultry and farm animals on farms not devastated, the very soil of which must first of all be put in condition. They will stimulate production by the young people of France through organized contests not only in farming but in home enterprises such as bread baking, garment making, cooking, and home management.

Nature always provides brains to interpret her peculiarities.
The machine that squeaks loudest does not always need the most oil.



Calhoun County Club Exhibitors.

BOYS' AND GIRLS' CLUBS PRACTICE TITHING.

They are givers as well as workers, those boy and girl club members out in Colorado; and because of their sympathy with and their liberal response to Red Cross appeals they have won national distinction by giving one-tenth of their earnings to that organization. Neither have they overlooked the Food Administration requirements, nor the Liberty Loan, War savings, and Thrift Stamp campaigns. In all of these activities they are reported to have played a commendable part.

Dogs That Did Their Duty

AMONGST the many activities of the war the national service of the brave dogs of Britain deserve special mention. They were in use officially for nearly two years as messengers, as sentries, and as guards for places of vital importance.

In the early months of 1917, a War Dog School of Instruction was founded by the War Office, and Lieut-Colonel Richardson, who has devoted his life to training dogs for military and police purposes, was appointed commandant. The school started at Shoeburyness, but was recently moved to Lyndhurst, Hants. Gamekeepers, hunt servants, and shepherds were called up from the army to be instructed, and to assist in the instruction of the dogs.

The dog recruits chiefly came from the Battersea, Birmingham and Liverpool homes for lost dogs, and many a dog has thus been saved from the lethal chamber. Many a brave soldier owes his life to some poor uncared-for stray dog.

Many dogs trained at the school were sent out to France to act as message carriers in the field. The skill, courage, and tenacity of these dogs has been amazing. During heavy barrages, when all other communications had been cut, the messenger dogs made their way, and in many cases brought messages of vital import.

Sometimes they have been wounded and there is wonderful record of the determination with which wounded dogs have persisted in their duty.

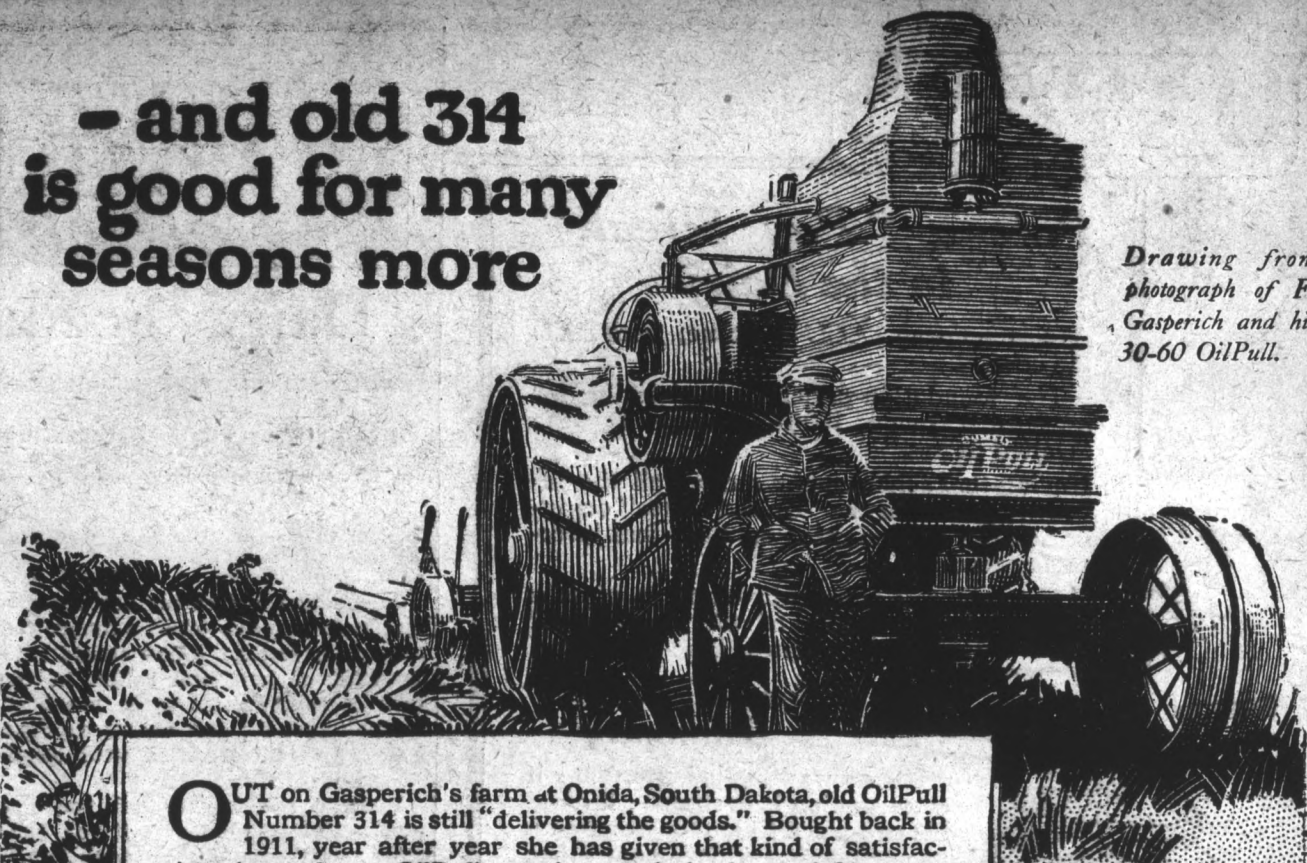
During the great German assault last year, part of our line in front of a famous town was cut off by severe enemy barrage. A messenger dog was released with an urgent appeal for reinforcements. It ran three kilometers in ten minutes. A French Colonial division was sent up and saved the situation, otherwise there would have been a terrible disaster. This dog was a Highland sheep dog.

On many other occasions messenger dogs have been taken up with our assaulting troops, and have carried back details of the captured positions to brigade headquarters, whereby the state of affairs could be accurately gauged and acted upon without delay. On one of these occasions a dog ran six kilometers in twenty minutes, while in another case a dog carried back a map of an important position in twenty minutes when a man would have taken an hour and a half to bring it in. In positions where runners have been unable to move at all, messenger dogs have carried out their mission.

Sentry dogs have been employed in the Balkans. As an example of their vigilance, one dog gave warning of an enemy scout at a distance of three hundred yards, and on many occasions the proximity of enemy patrols was notified by the dogs before our sentries were aware of their presence.

Large numbers of dogs have been used on the Italian and other fronts to guard valuable stores. By this means large numbers of men have been released for other duties, and vulnerable spots of vital importance have been rendered secure.

- and old 314
is good for many
seasons more



Drawing from
photograph of F.
Gasperich and his
30-60 OilPull.

OUT on Gasperich's farm at Onida, South Dakota, old OilPull Number 314 is still "delivering the goods." Bought back in 1911, year after year she has given that kind of satisfaction that only an OilPull can give—and she is good for many years more.

As Gasperich, himself, tells the story—"For eight years now, number 314 has done the heavy work on this farm, cropping from 600 to 900 acres a year. We are just finishing breaking for the season, and the machine is working as good as when new, pulling eight breaking plows in dry sod.

"The reasons why we bought an OilPull were—first, because it was a guaranteed oil-burner; second, on account of its strong, rigid construction; third, because of its actual power performance with a throttle-governed and smooth-running motor. And I'll say right here that the machine has far surpassed all our expectations.

"We have pulled eight 14-inch breakers in dry bunch grass, with disk and drill behind. Parties here breaking the same kind of ground have used as high as eight horses on a single breaking plow and got stuck at that. You can figure it out for

yourself—the OilPull has been pulling nearly an 80-horse load. No tractor of any kind around here has ever equalled it.

"As for cheap operation, nothing can touch our old OilPull. I've noticed that neighbors, who have 'so-called' oil-burners, buy gasoline by the barrel. We buy a small can of gas once in a while just for starting when the engine is cold. Our repairs have been so few I have forgotten them."

This is but one chapter from the written records of OilPull performance that have proved the remarkable long life, dependability and economy that go with every OilPull. It is plain that the best basis upon which to choose a tractor is its performance over a period of years in the hands of owners.

You can get the OilPull in sizes from three to ten plows—there's a size to fit your farm. A postcard will bring you the OilPull Catalog.

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OilPull



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DETROIT

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PILGRIM MOTHERS YARN

Earn money knitting for others or make knitted goods for your own comfort. We make and sell the all wool yarns like our mothers made and used. You buy at factory prices. Robes and Blankets also.

Reed City Woolen Mills

Reed City, Mich. Established 1883

SCOTT'S FIELD SEEDS

Our seeds are selected and cleaned to be WEEDLESS and free from dead grains. They will go much farther than ordinary field seeds, nearly always adding enough to the crop to pay for themselves. Samples and catalogue including "How to Know Good Seed" free. Write today. D. M. SCOTT & SONS CO., 264 5th St., Marysville, Ohio.

MAN WANTED

A practical married farmer and dairyman to work a 90-acre farm close to Detroit, must be thorough and furnish references. Box J111 care of Michigan Farmer Detroit, Mich.

Wanted young man to work a nearly new farm; plenty of pasture. Address Box C111 Michigan Farmer, Detroit, Mich.

Wanted: Experienced single man to run small kerneling machine, permanent position, write full particulars, salary, references. Box 447, Albany, Georgia.

FEEDING CORN

Car lots or less. YOUNG-RANDOLPH SEED CO. Orosso, Mich.

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Send us your samples. Particulars of wet and off grade beans. Clover seed and seed screenings wanted. Calf beans for sale. W. L. IRELAND & CO., Grand Ledge, Mich.

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Ped gree Atredale pups, 3 mo. old from registered stock. Fine watch dogs for poultry. Males \$10, females \$5. R. G. KIRBY, R. I., East Lansing, Mich.

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Puts a "Pay Streak" in the Dairy

ALL the cream, ALL the time, from ALL the cows.

—The foundation-principle in dairying for profit; first made 100%—possible by the "United States."

Having that achievement secure, all the inventive genius of the "United States" organization has concentrated on time- and labor-saving features.

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Your buildings may shelter stock that represents a life-time's careful breeding; tools that could not be replaced at insurance values; grain that is urgently needed by a hungry and war-torn world. All these should not be left at the mercy of a stray spark or devastating hurricane. For safety's sake, build with

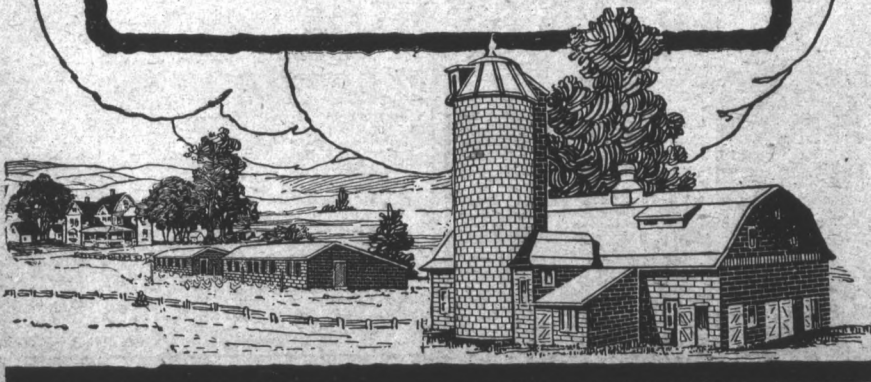
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Natco buildings are fire-safe and wind-proof. Rats, mice and other vermin cannot penetrate Natco walls. The dead-air spaces in the walls keep Natco stables dry, wholesome and sanitary—warm in winter and cool in summer. Natco buildings are truly economical. They will stand as a permanent investment for generations. Your farm will bring far more should you wish to sell. Ask your building supply dealer to show you samples of Natco Hollow Tile for all farm building purposes.

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Dairy Feeding Problems

GRAIN WITH CLOVER AND SILAGE.

Kindly give me a ration for my dairy cows. I have silage and clover hay and have been feeding some oilmeal. The cows will freshen in March. How should I feed them now and after they freshen to produce the best results at the least expense?

Gd. Traverse Co.

W. C. S.

Corn silage and clover hay are the best foods one can get as a foundation for a dairy ration. A cow should have one-third of her total ration in the form of concentrates to do her best, and so to get the best results we must feed grain in connection with clover hay and corn silage.

I would recommend that you also give a little ground oats if you have plenty of them to these cows before they freshen. There is no food that tends to give more vigor to an animal than oats. It is a splendid feed before the cows freshen; a little oilmeal is also excellent. This will help to keep the cows in good condition until they freshen, then gradually increase the grain ration. There is nothing better than ground oats and oilmeal after the cows freshen; simply increase the amount.

It probably would be cheaper to mix bran with the ground oats, equal parts by weight, then you could feed two pounds of oilmeal to each cow per day and a sufficient amount of the ground oats and bran to give each cow a pound of grain for every three pounds of milk she produces if her milk tests better than four per cent. If it tests less than four per cent then I would give one pound of grain for every four pounds of milk she produces. For instance, if a cow is giving thirty pounds of five per cent milk in a day, give her ten pounds of grain per day. On the other hand, if the cow is giving forty pounds of milk testing less than four per cent, she, too, would be entitled to ten pounds of grain per day.

C. C. L.

A BALANCED RATION WITH CORN AND OATS.

Will you please give me a balanced ration for milch cows? I have ensilage, clover hay with a little timothy mixed in, and can get corn, also oats. What else do I want, or would you cut out the corn and oats and use something in its place? At the present prices of dairy feeds I am up against it, so kindly give me the best ration at the cheapest price.

G. D. W.

There is nothing better for a foundation ration for dairy cows than corn silage and clover hay. You can produce more cow feed to the acre on a farm in the form of corn silage than with any other plant grown in this climate. We cannot afford to attempt to farm in Michigan without growing clover because of the fact that it is used in keeping up the fertility of the soil and the clover hay is a most excellent food to feed in connection with corn silage because the corn plant is deficient in protein while clover hay in itself furnishes the food nutriment, proteins and carbohydrates, in just about the right proportion for a balanced ration. Only it is so bulky that the cow cannot consume a sufficient amount of it to produce maximum results, hence it is the duty of the farmer to add grain to balance the corn silage and clover hay, and since corn silage is deficient in protein it is best for him to add a food that contains more protein than clover hay does. Now corn meal does not balance this ration, it

simply adds bulk, which is all right. Oats help to balance it a little but have not a sufficient amount of protein to properly balance the corn silage, hence the farmer ought to add to his home grain ration of corn silage, clover hay and corn and oats, some other grain food richer in protein to give the cow the desired amount of protein without an excess of carbohydrates. You can get this in cottonseed meal, oil meal, gluten feed, wheat bran. If you feed oil meal and cottonseed meal it only takes a small added amount to balance the ration because they are exceedingly rich in protein. If you feed wheat bran you must feed it in large quantities else you will not have sufficient protein.

I would suggest that you feed all the clover hay and corn silage that the cows will eat up clean, and as a grain ration you mix corn and oats equal parts and then add one-fifth as much oil meal. That is, two hundred pounds of corn meal, two hundred pounds of ground oats and one hundred pounds of oil meal, and feed the cow one pound of this grain mixture for every four pounds of milk that she produces. If you have got a good dairy cow she will give you good returns.

C. C. L.

ACCREDITED HERDS OF CATTLE.

(Continued from page 39). have recently made the additional requirement that pure-bred cattle cannot be admitted except on a sixty or ninety-day retest, unless such cattle come from a tuberculosis-free accredited herd. All states now permit the entrance of cattle from such herds without special test, the annual certificate being sufficient. The breeder, therefore, who has a clean herd and certified as such, not only enjoys the prestige which goes with such a herd, but he has the farther advantage of making interstate shipments without restrictions.

The disease is so prevalent throughout the country that the majority of the herds will show a few reactors on first test. These can either be slaughtered or segregated according to the instructions of the federal and state officials and the herd can be again tested six months later. If every individual in the herd passes the second test and then passes a third test six months or a year later, the herd is eligible to be certified as tuberculosis-free. In most cases if there are but few reactors on first test and they are properly disposed of there will be still fewer or perhaps none, found on second test. After the herd is once clean and certain precautions are taken with respect to new purchases it is a comparatively easy matter to keep the herd clean if the buildings are well ventilated. There is reason to believe that every state in the Union which does not already have legislation to meet the conditions of the new federal appropriation will pass suitable laws in the near future and greater progress than has heretofore been made in the eradication of tuberculosis will result in the immediate future.

The following states already have appropriations with which to indemnify owners of reacting cattle and can immediately take advantage of the new federal appropriation: Connecticut, Kentucky, Maine, Massachusetts, Minnesota, Missouri, North Dakota, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, West Virginia and Wisconsin.

New Era in Dairy Industry

(Continued from page 40).

been trying to bring to our members dairy feeds purchased in large quantities at the lowest possible price. We have negotiated with many feed concerns; finally settled on one prospect with feed that stood the state requirements and was guaranteed pure from every adulterant. We have been offering this feed absolutely without profit to the association, at a price that was from \$5 to \$11 per ton less than was asked for the same quality of feed from the retail stores in small quantities. Your association has spent over \$200 in the salary and traveling expenses of a man, trying to give to you the benefit of this one business move. We failed absolutely in this endeavor; not selling one single carload of feed until the price went up \$20 per ton on bran; and today we are deluged with orders by letter and word of mouth, wanting to take our feed. You had the opportunity to avail yourself of this business advantage. This has gone by for the present, while the poor boy to whom I referred has his granary stocked with feeds at the cheaper price, and his production will be at a larger profit because of this.

The Price and Future Prospects.

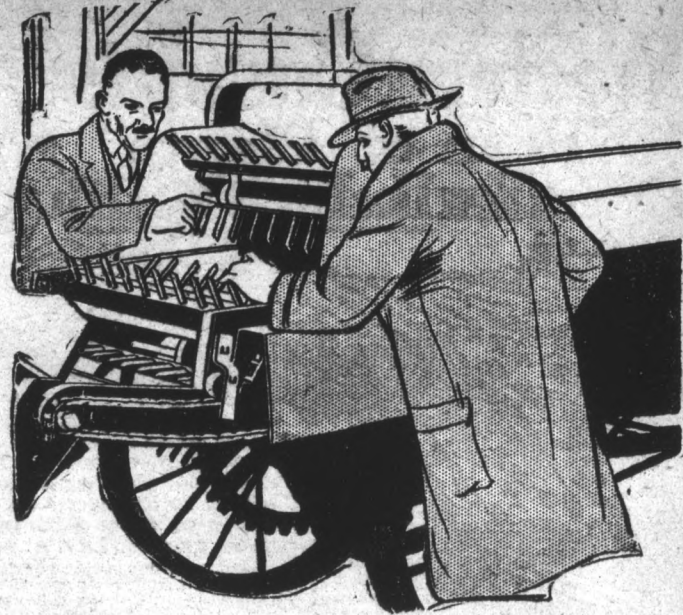
The Milk Commission has met. It was long delayed because of the uncertain conditions surrounding the proposition of cooperation between the producer and distributor. As indicated above, the distributors convinced the commission of the jeopardy in which their business was placed by the price for December, and with true business instinct, the commission sought a way to relieve this strain and loss and yet not ask the producer to suffer.

The commission recognized the injustice of asking the producer to accept a less price in the face of advancing feed cost, and this was obviated by the way of the determination which follow: The price for January milk is \$3.88 less the regular railroad freight rate from the point of shipment; with the understanding that in March and April the price should be sufficient to compensate the producer for the loss sustained by the January reduction. This is on 3.5 milk, with four cents a point instead of five cents a point above or below. Last month's experience showed that the great majority of milk coming into Detroit tested below 3.5. Consequently an increased percentage price, while it helped on the small amount of milk testing above 3.5, was an injury to the producer whose milk tested below this point and as the greatest good to the greatest number was sought, it was decided to leave it at the former figure of four cents a point above or below.

Another matter of vital importance, and one which we think may inaugurate a new era, was the arrangement made whereby the distributors agreed to abide by the decision of the commission to pay, for the months of July, August, September and October, possibly as high a price as milk has ever reached, provided commercial conditions in the city of Detroit remained as they are at the present time. Consequently, we are anticipating, under normal conditions, \$4.00 milk for the months above mentioned.

We trust for your cooperation and support that this great endeavor may continue for years to come.

BUILT TO LAST



It's the Business End of a Spreader That Counts!

You don't buy a spreader for looks. You're interested in its capacity for down-right hard work. And it's the business end of a spreader that tells the story. Does it pulverize thoroughly—does it spread, and not just unload? Will it last? Those are the things you want to make sure of!

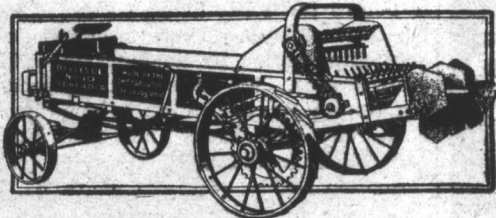
Look at the business end of the Bellevue No. 10 Spreader!

Those two pulverizing cylinders are active at all times and are a positive guarantee against chunks passing over the top. The upper cylinder reduces the draft for it removes the top weight before the load reaches the main cylinder and in this way reduces the horse power required.

Notice too, the distributor blades—steel instead

of wood—regular equipment in the Bellevue. They're hexagonal in shape—have sharp corners—and are arranged so that they give the pulverized manure a wider spread than any other arrangement possibly could—and they assist in pulverizing. No frozen chunks can break them. They're made to last—built for years of service—just like all parts of the Bellevue No. 10 Spreader.

Ask your dealer about it—and if he doesn't know, write us for our free Spreader Catalog.



OHIO CULTIVATOR COMPANY BELLEVUE, OHIO

Address Dept. 11

The BELLEVUE No. 10 SPREADER

"Top-Notch" HOLSTEINS

The young bulls we have for sale are backed up by many generations of large producers. Buy one of these bulls, and give your herd a "push". Full descriptions, prices, etc. on request.

McPherson Farms Co., Howell, Mich.

"Winwood Herd" REGISTERED Holstein-Friesian Cattle

FLINT MAPLECREST BOY
His sire is Maplecrest Korndyke Hengerveld. His three nearest dams each over 30 lbs. of butter in 7 days. His dam and granddam both made over 1232 lbs. of butter in one year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vassar Bell, 30.57 lbs. of butter in 7 days and 121 lbs. in 30 days. Her butter fat test is 5.27. This looks about right to the man who goes to the creamery. We have bull calves from 2 weeks to 12 months old. From A. R. O. dams and sired by Flint Maplecrest Boy, which we will sell at a dairy farmers price breeding considered. Just think 40 more cows to freshen which means more bull calves. Let us know your wants. We will make terms on approved notes.

JOHN H. WINN, Inc.
Lock Box 249, Rosecommon Mich.
Reference Rosecommon State Bank.

The Pontiac Herd "Where the Champions come from"

Offer Bull Calves sired by sons of Pontiac Korndyke Hengerveld DeKof, Pontiac Dutchland, or Admiral Walker Pietertje.

Do you want a Pontiac in your herd?

Pontiac State Hospital, Pontiac, Mich.

The Traverse Herd

We have what you want in BULL CALVES, the large fine growthy type, guaranteed right in every way. They are from high producing A.R. O. ancestors, Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

THE HOLSTEINS

At Maple Avenue Stock Farm are under Government supervision. The entire herd have just been tuberculin tested and not one reactor. A good place to buy that bull you are looking for, and I have two very fine, richly bred, and splendid individuals ready for any amount of service. I want to answer any question you may ask about them.

L. E. CONNELL, Fayette, Ohio.

Reg. Holstein Bull Calves, can ship a fine one at \$50 Reg. and Del. also one yr. at \$75.00.

J. ROBT. HICKS, St. Johns, Mich.

CLUNY STOCK FARM

100--REGISTERED HOLSTEINS--100
When you need a herd sire remember that we have one of the best herds in Michigan, kept under strict sanitary conditions. Every individual over 6 mos. old regularly tuberculin tested. We have size, quality, and production records backed by the best strains of breeding.

Write us your wants.

R. BRUCE McPHERSON, Howell, Mich.

DISPERSAL

10 A. R. O. Holstein Cows, 4 to 6 years old, records up to 26 lbs. in 7 days, 3 Heifers 2 to 3 years old, 4 yearling Heifers from A. R. O. Dams, 5 Heifer calves.

Cows all fresh since October save one, due this winter. All under Government supervision for control of tuberculosis. Herd located at Fabius Station near Three Rivers, Michigan.

Peaceland Stock Farm, Three Rivers, Mich.
Olas. Peters, Herdman. For breeding and prices write C. L. BRODY, Port Huron, Michigan

For Sale at a bargain. A few young bull calves from high producing stock. Buy one of these fine calves and raise a bull for next fall.

A. F. LOOMIS, Owosso, Mich.

\$75 gets 1 mos. old grandson of all four D.D. Atkins Maplecrest Korn. Heng. 25 lb. dam of Johan Heng. Lad. 20 lb. son DeKol 2nd. Butter Boy 3rd, 19 lb. 2 yr.

M. L. McLAULIN, Redford, Mich.

HOLSTEINS of quality. Bull calves from dams with records high as 31 lbs. in 7 days. Also colts puppies.

E. A. HARDY, Rochester, Mich.

Reg. Holstein Bull three mo. old, also some females, some spring bag now good O.R.O. breeding. VERNOR CLOUGH, Parma, Mich.

Parham's Pedigree Stock Farm offers Reg. Holstein cattle, Chester White Swine, extra bargains in calves and fall pigs. Bulls half price.

R. B. PARHAM, Bronson, Mich.

\$125 buys big, thrifty, yearling reg. Holstein heifer or sire Colantha Johanna Creamelle Lad, Dam a good A.R.O. cow. B. B. REAVEY, Akron, Mich.

The Wildwood Jersey Farm.
Bulls for sale by Majesty's Oxford Fox 13214 and Eminent Lady Majesty 15094, and out of R. of M. Majesty dams. ALVIN BALDEN, Capac, Mich.

Maple Lane R. of M. Jersey herd. Bulls, bull calves and heifer calves sired by a nephew of the new World's Champion, Sophie's Agnes. Also R.I.R. Cockerels, both combs. Irwin Fox, Allegan, Mich.

BROOKWATER FARM
2 Bulls
Ready for Service
Sired by butter bred bulls and out of high testing dams.
The Producing Kind
with Jersey type and capacity. Prices reasonable. Also a few bred gilts (Durocs) and boars.
Brookwater Farm.
Herbert W. Mumford, Owner.
J. Bruce Henderson, Mgr.
Ann Arbor, Mich.
R. 7.

JERSEYS
The PROFIT BREED
WHY waste feed on cows that skim their own milk? Jersey's produce the highest percentage of butter fat at the lowest feed cost. The man with one Jersey is never satisfied until he has a herd. Write to Breeders for pedigrees and prices. Let us send you profitable facts about the Jersey.
THE AMERICAN JERSEY CATTLE CLUB
1346 West 23rd St. New York City

Hillside Farm Jerseys, offer 3 yearling bulls, backed by tested dams, and sired by a double grandson of Royal Majesty, first prize & junior champion at Mich. State Fair, good individuals. C. & O. Deake, Ypsilanti, Mich.

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

JERSEY BULLS
Ready for service FOR SALE
WATERMAN & WATERMAN, Ann Arbor, Mich.

FOR Sale Registered Jersey bulls, ready for service, also calves, line bred Majesty's from high producing dams. All stock tuberculin tested by U. S. Gov't. Reasonable prices. A. Taggett, Fairgrove, Mich.

Polled Jersey Cattle Breeders' names, sale dates and other information of CHAS. S. HATFIELD, Box 57, R. 4, Springfield, Ohio

Meridale Interested Owl No. 11131 heads my herd. Bull calves from this great sire and out of R. of M. dams for sale. C. B. WEHNER, Allegan, Mich.

For Sale Registered Jersey Cattle of both sex. Smith & Parker, R. 4, Howell, Mich.

LILLIE Farmstead Jerseys. Young bulls ready for service from R. of M. cows. A few bred heifers and cows. COLON C. LILLIE, Coopersville, Mich.

(Additional Stock Ads on P 69)

Western Canada's "Horn of Plenty" Offers You Health & Wealth



Western Canada for years has helped to feed the world—the same responsibility of production still rests upon her. While high prices for Grain, Cattle and Sheep are sure to remain, price of land is much below its value. **Land capable of yielding 20 to 45 bushels of wheat to the acre can be had on easy terms at from \$15 to \$30 per acre—good grazing land at much less.** Many farms paid for from a single year's crop. Raising cattle, sheep and hogs brings equal success. The Government encourages farming and stock raising. Railway and Land Co's. offer unusual inducements to Home Seekers. Farms may be stocked by loans at moderate interest. Western Canada offers low taxation, good markets and shipping; free schools, churches and healthful climate. For particulars as to reduced railway rates, location of land, illustrated literature, etc., apply to Supt. of Immigr., Ottawa, Can., or **M. V. McInnes, 178 Jefferson Ave., Detroit, Mich.** Canadian Government Agent.

WESTERN CANADA
Farm Lands at Low Prices
The Wheat Belt of America

Eggs Higher than Ever— And You CAN get them

if you help your layers. Hens cannot lay heavily unless they eat, digest and assimilate plenty of feed. Many poultry rations, especially in these times of food conservation, are inferior and do not produce results. They are not palatable, are coarse and hard to digest.

Pratts Poultry Regulator

makes good rations better, is an absolute necessity in inferior ones. "Guaranteed satisfactory or money back"

Pratts Poultry Regulator flavors feed mixtures, thus inducing the layers to eat more. It strengthens and invigorates the organs of digestion and assimilation so the birds "get the good" of what they eat. It tones up the whole system insuring that perfect health which is the basis of regular production. It speeds up the layers and brings a steady flow of high-priced, profitable winter eggs.

Get a supply of Pratts Poultry Regulator from your dealer today. Make every hen lay now while fresh eggs are bringing big money.

Big Poultry Book FREE on request

PRATT FOOD COMPANY

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150 EGG INCUBATOR CHICK BROODER
Both are made of Calif. Redwood. Incubator is covered with asbestos and galvanized iron; has triple walls, copper tank, nursery, egg tester, thermometer, ready to use. 30 DAYS' TRIAL—money back if not O.K. Write for FREE Catalog Now. **Ironclad Incubator Co. Box 97 Racine, Wis.**

BOOK ON DOG DISEASES And How to Feed
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America's Pioneer Dog Remedies

Chickens Sick?—Use Germozone
Roup, colds, bowel troubles, sore head, limber neck, etc. At dealers or postpaid 75 cts. with 5 book Poultry Library. **GEO. H. LEE CO., Dept. 426, OMAHA, NEB.**

POULTRY HOMESTEAD FARMS

A Federation of Interests

Day Old Chicks We are now at the beginning of another hatching season. Our new poultry catalog, with illustration and full description of each breed, will be ready for distribution about January 15.

If you want to buy Day Old Chicks this spring, write to us so that you may learn something of our Pure Breed Practical Poultry; each breed in a colony entirely separate from every other colony, a free farm-range stock.

Breeds for the season are:
Barred Plymouth Rocks
White Plymouth Rocks
Buff Plymouth Rocks
R. C. Rhode Island Reds
S. C. Rhode Island Reds
White Wyandottes
Silver Laced Wyandottes
Seelie Butter Cups
S. C. Black Minorcas
S. C. White Leghorns
R. C. White Leghorns
S. C. Buff Leghorns
S. C. Brown Leghorns
R. C. Brown Leghorns
S. C. Anconas

Eggs for Hatching Eggs from the foregoing breeds in quantities for incubators and also in single sittings. We would appreciate correspondence with any person who will need incubator eggs this spring. Eggs for early broilers also in quantities and at low prices.

Cockerels A few Cockerels of nearly all the foregoing breeds.
We will send illustrated catalogue and price list; ready about January 15th.

BLOOMINGDALE FARMS, Bloomingdale, Mich.

Baby Chicks Bred-to-lay S.C.W. Leghorns. The high cost of feed we have culled our breeders closely, saving the best; therefore, we will have to advance the price to 15c each for March and April. Book orders early. **Sunnybrook Farm, Hillsdale, Mich.**

Barred Rock Cockerels, bred from prize winners, single birds \$4. two or more three dollars each. **A. A. WOOD & SON, Saline, Mich.**

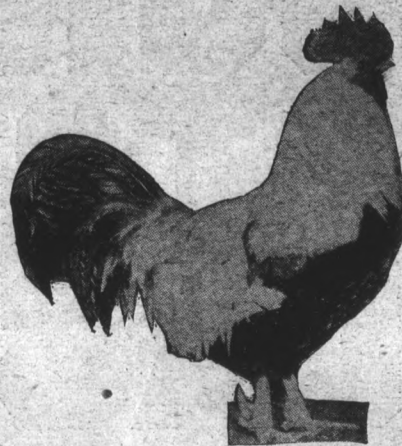
Barred Plymouth Rock Cockerels, fullblood \$4 and \$5 each according to size and quality. **J. A. BARNUM, Union City, Mich.**

PILLING CAPON TOOLS
Easy to use
Double the Weight From the Same Feed
So great has been the demand for these practical, ready-to-use caponizing tools that most dealers exhausted their stocks. The fact that the Pilling factory was working 100% on Government orders for surgical instruments prevented us from refilling their shelves.
But next Spring we shall be able to supply dealers who order early. Get your order in now—any poultryman with Pilling caponizing tools and our complete illustrated instructions can make each dollar's worth of feed produce four times as many dollars as with roosters. Capon Book FREE.
G. P. PILLING & SON CO., Phila., Pa.
Est. 1814 America's Pioneer Maker of Caponizing Tools

\$10.95 Buys 140-Egg Champion Belle City Incubator
Hot-Water, Copper Tank, Double Walls, Fire Board, Self-Regulated, With \$5.35 Hot-Water 140 Chick Brooder—both only \$15.95.
Freight Prepaid East of Rockford, Ill.
Allowed on express. Guaranteed. My Special Offers provide ways to earn extra money. Order Now, or write for book, "Hatching Facts."—It's Free and tells all. **Jim Roban, Pres.**
Belle City Incubator Co., Box 14, Racine, Wis.

Clean Out the Mites
Give your hens a chance to do their best. Keep the houses, runs and brooders sanitary with a **BROWN'S AUTO-SPRAY**. Use it, too, in the garden and for spraying home fruit trees and doing many other jobs.
Send today for Catalog and Spraying Calendar—Free.
THE E. C. BROWN CO.
852 Maple St., Rochester, N.Y.

Poultry Queries Answered



FEEDING BEEF SCRAP.

Will you please give me a ration to feed hens to make them productive. I have barley, corn, bran and beef scrap. Is there any other kind of grain I should have? Will you please tell me how much beef scrap I should feed?
Monroe Co. C. G. R.

In feeding poultry, barley ranks as a good substitute to corn, and in Europe many poultry flocks live on barley much as some farm flocks in America practically live on corn. It would pay you to use some oats in feeding the birds. Oats can be fed as a scratch grain with corn but they are better when boiled and fed to the flock in pails or troughs. Beef scrap usually composes about ten per cent of the dry mash and a little more can be given with safety if sour milk is not used. We have found ten per cent of beef scrap satisfactory when sour milk is before the birds at all times. The barley is often fed whole to hens as a scratching ration in combination with other grains. We believe at the present time a scratch ration of one-third corn, one-third barley and one-third oats will give satisfactory results.
Ingham Co. R. G. K.

WHITE DIARRHEA.

Our hens have laid less and less each year now for five or six years, with the same care. Last year when dressing some of the older ones (two or three years old) for the market, I found several where the yolks in the egg sack would be turned black and to have formed a semi-hard lump. In some cases there would be a double handful altogether of these lumps. The hens were fat and seemingly in good health, but, of course, did not lay. Now a few days ago a hen had her leg broken badly and we decided to kill her. She was in the same condition, only worse looking all through the intestines. I couldn't use her. What causes it? Do you suppose it is contagious and are most of them liable to be afflicted with it, causing them not to lay well?
Cheboygan Co. C. D. S.

The description given of the internal condition of the hens killed seems to indicate that they are afflicted with the disease known as white diarrhea, which is also known as Bacterium pullorum. A diagnosis for the disease in living hens can be made by blood tests. The Michigan Agricultural College has not published any bulletins on this subject, but several have been published by the Experiment Station at Storrs, Connecticut.

The writer has seen fine appearing and vigorous hens which proved to carry this disease. They were fat and in some cases proved to be over-fat. The fact that the flock described has been falling off in egg production during a period of five or six years probably indicates that a part of the hens have this white diarrhea. Of course, many young chicks die from this trouble, when the eggs are laid by infected hens, but often old hens develop a kind of immunity to the trouble although they transmit it to their offspring by means of the egg. Of course, as the disease progresses laying will cease. It would be interesting to know if the owner of this flock has also had a difficult time in raising chicks. If so, pos-

sibly the losses have been due to the white diarrhea.

We would advise that he sell this flock of hens and buy eggs for hatching from a bred-to-lay flock. It will not pay to try to hatch chicks from the eggs from hens that may have the trouble, and if the entire flock has been laying poorly it will certainly be good management to get a new start with vigorous birds which are not carriers of this disease. It will pay to disinfect the poultry house thoroughly and try and raise next spring's chicks on clean ground.

FEEDING FOR EGGS.

I care for our flock of chickens through the winter months and would like to ask a few questions concerning them. We have a flock of about thirty-five hens; they have a warm place to stay and have plenty of corn to eat. They are healthy and active but refuse to lay. In feeding corn which is the best way to feed it, on cob, shelled or cracked? About how much should each hen have? Can a hen get too fat to lay? How can you tell if a hen is too fat for laying? What is the average weight of a Plymouth Rock hen to be in good laying order? Can you give me a cheap ration to feed to make these slackers lay?
Newaygo Co. H. P.

We prefer to feed corn, either shelled or cracked rather than on the cob. The hens have to scratch longer to dig all of the cracked corn out of the litter and so that is a little better than whole corn, but we have not found any particular difference in the use of either cracked or whole corn when fed in a deep straw litter. A flock of hens should receive about as much corn at night as they will clean up and go to bed with full crops. During the long winter nights a full crop of corn helps to keep them warm. About a handful of corn to each hen is usually enough although the amount they will eat depends somewhat on their attention to the dry mash hopper and any other feeds that they may receive. Some hens have a larger capacity than others, and it pays to occasionally feel of the birds' crops after they are on the roost at night to see if they are good feeders and are eating enough before going to roost.

Hens of the American and Asiatic breeds frequently become too fat to lay, especially after they are two years old. A hen that bags down behind from heavy feeding and lack of exercise may produce soft-shelled eggs or more frequently no eggs at all. Such a hen should be marketed or isolated and fed a ration of bran and water until she returns to normal weight. The use of deep litter in which the birds can work for their scratch grain is quite necessary to keep them healthy and free from accumulations of fat. The standard weights of Plymouth Rocks are: Cocks, nine and one-half pounds; cockerel, eight pounds; hen, seven and one-half pounds; pullet, six pounds.

The Cornell whole grain mixture which has been widely used consists of sixty pounds of wheat, sixty pounds of corn, thirty pounds of oats, and thirty pounds of buckwheat. Since wheat has not been available for poultry, oats have been substituted with great success in many instances. Soaked and boiled oats are eagerly eaten by the hens. Good results can be obtained by feeding boiled oats in the morning and hard corn in the litter at night and our hens have laid very well this last year on that ration.

A hopper of dry mash reduces the work of caring for the birds and in this mash they should obtain much egg producing material. The Cornell ration consists of sixty pounds of corn meal, sixty pounds of wheat middlings, thirty pounds of wheat bran, ten pounds of oil meal, fifty pounds of beef scrap, one pound of salt. We have had some success with a dry mash consisting of

ten pounds of beef scrap to one hundred pounds of wheat bran when the birds have had plenty of sour milk at the same time.

For a small flock of hens, the table scraps furnish a sort of balanced ration and it takes less trouble to properly feed such a flock than a large

number of birds. Green food is very necessary and can be given in the form of cut clover, mangels, or sprouted oats. Cull vegetables can be boiled and fed profitably. Never forget the supply of oyster shells, charcoal and grit for they are important factors.

Ingham Co.

R. G. KIRBY.

Storing Poultry Feeds

GREAT care is necessary in buying and storing feed for poultry, as a large part of the success in the business depends upon the skill in managing the feed room. Mouldy feed causes severe losses in the flocks. Salvage wheat at one time caused great injury to some of the flocks in our community. The wheat was simply spoiled feed and nothing more, and it retarded egg production in entire flocks and killed many birds. When the corn crop is not good there is a danger that mouldy corn may be included in the ration and this must be avoided.

In buying commercial beef scrap a test should be made to determine its quality. Pour boiling water on a small pan of the scrap and if the odor resembles spoiled meat, the beef scrap should be used to fertilize the garden and not fed to the fowls.

It pays to buy as much of the feed as possible in the fall shortly after the harvest time. Grain that is purchased in the community does not have to be hauled to the elevator and back again, and this is a saving in the cost. The middleman is eliminated and the poultryman is able to buy grain that is fresh and of good quality.

In many cases it will pay to buy the feed in the fall, even if the money has to be borrowed at the bank. The interest on the money during the average year will not correspond with the increased price of the grain if the poultryman waits until late in the winter and begins to look for grain when his bins are nearly empty.

When bran and other mill feeds can be purchased by the carload it is a great saving for the farmer. We should see more cooperation along that line. In some districts there are few farmers that can afford to purchase a carload of bran but when several of the neighbors cooperate they are able to manage the transaction successfully. It is not necessary for the cooperation to be among poultrymen alone, as frequently a dairyman and poultryman can cooperate in the buying of mill feeds to the advantage of both.

Feed that has cost good money must receive protection from rats and mice. The feed room should be well sealed against the inroads of mice. The metal cribs and bins are fine for poultrymen as they are practical insurance against rats, mice and fire, and also thieves. These cribs and bins can often be located close to the laying-houses and thus save time in the carrying of feed. They are neat in appearance and add to the looks of the entire poultry plant.

When feed is stored in a room at one end of a laying-house the house should have a cement foundation even if it does not have a cement floor. The foundation will keep out rats and mice and help in protecting the grain.

A cat that is a good mouser will help in keeping down the rats and mice around the farm and a good ferrier will be additional insurance against rats, weasels, skunks, etc. It pays to clean up all scrap and brush piles to prevent the rodents from breeding on the farm.

Many poultrymen can save money by carefully estimating their needs in the fall. Then if they cannot obtain enough grain to carry them through the winter it is sometimes better to cut down the flock by rigid culling until they have the best of the layers remaining and enough feed in prospect or in storage to carry those birds

through to the next harvest. Sometimes a flock goes on short rations when the grain supply runs short in the winter and all of the feed has to be hauled from the city feed store a few bags at a time. This results in a small egg record and no profit. The poultrymen who anticipate feed requirements in advance are the most sure of success.

H. WILLSON.

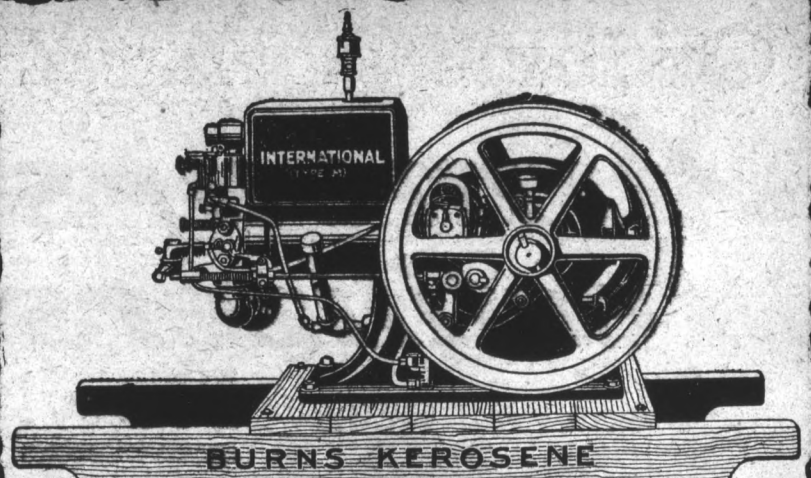
PRACTICAL POULTRY NESTS.

WHEN hens steal their own nests in the hay and in the fence corners it will be noted that they are rather shallow, possibly just curved enough to make the eggs roll toward the center without piling up on each other. When nests are made in the poultry house they should follow out that principle as far as the litter is concerned. Place just enough straw or hay in the nest to make a hollow just as the hen would make in the hay. Hay can be knotted up and twisted into the nests in such a manner that it is not easily scratched out. Frequently the hens will scratch most of the loose straw out of a nest in two or three days.

The egg-eating habit is largely prevented by having the nests dark. The hens then enter the nests on a track built at the rear and the eggs are removed by lowering a hinged door at the front. Darkened nests containing sufficient litter will usually prevent egg-eating. Some breeders place the nests beneath the droppings boards but this makes them more difficult to clean and increases the danger of lice and mites obtaining a start. Nests placed along the wall should be at sufficient height so that the farmer can gather the eggs without unnecessary stooping. It pays to hinge the bottoms of the nests so that they can be dropped down to release unclean litter. This should be raked up and removed from the house instead of being mixed with the scratching litter on the floor. Nests with hinged bottoms can be cleaned and sprayed in a short time and filled with fresh litter. There are few cracks and crevices to act as breeding places for mites and lice.

Occasionally hens will lay in the litter beneath the droppings boards. At first thought it might appear best to leave these nests in the litter in anticipation of finding more eggs there the next day. However, we always destroy such nests by raking them full of litter to discourage the hens laying in places where the eggs are difficult to gather. Eggs laid on the floor may become lost in the straw or they may be broken by the birds and eaten. This will lead to the egg-eating habit. If an egg is accidentally broken on the floor and the hens eat it quickly it does not follow that they are egg eaters as a habit. Many hens will eat a broken egg ravenously when they would never think of picking open an egg with a strong shell.

It pays to have plenty of nests for the size of the flock as this will prevent some hens from stealing their nests. The amateur may rejoice when finding a large nest full of eggs in some corner of the poultry yard, but the practical poultryman knows that those eggs should have been in the poultry house. He knows that they should have been marketed when fresh and the eggs in the stolen nest must be used at home where every one can bear a rigid inspection before use.



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Cockerels: R. and S.C.R.I. Reds and R.I. Whites. \$2.50 up, good stock, satisfaction guaranteed. O. E. HAWLEY, Ludington, Mich.

Chicks, We ship thousands, orders booked now for spring delivery, booklet. FREEPORT HATCHERY, Box 12, Freeport, Mich.

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JOHN'S Big Beautiful Barred Rocks are hen hatched quick growers, good layers, sold on approval \$4 to \$8. Circulars photos. John Northon, Clare, Mich.

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ROSE COMB BROWN LECHORNS from winners at the largest shows in America. Mrs. CLAUDIA BETTS, Hillsdale, Mich.

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Rhode Island Reds. R. C. large fancy cockerels at three dollars each. BURT SIESSON, Imlay City, Mich.

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White Wyandotte eggs for hatching also baby chick out of choice stock; send for a 1918 circular. DAVID RAY, 709 Norris St., Ypsilanti, Michigan.

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FOR SALE Giant Bronze turkeys, hens and toms, Pekin ducks. Golden Glow seed corn in ear. Wolverine and Worthy seed oats. One extra good Red English Berkshire spring boar. ROBT. P. REAVEY and SON, R. D. 1, Caro, Mich.

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RUNS EASY
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With a FOLDING SAWING MACHINE. 5 CORDS by ONE MAN in 20 hours. Send for Free catalog No. E 44 showing low price and latest improvements. First order secures agency. Folding Sawing Mach. Co., 161 W. Harrison St., Chicago, Ill.

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\$3 Package guaranteed to give satisfaction or money back. \$1 Package sufficient for ordinary cases. MINERAL HEAVE REMEDY CO., 463 Fourth Ave., Pittsburgh, Pa.

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Buy now while we can save you money. Wonderful values in Best Seed. Guaranteed Pure Iowa Grown—re-cleaned and tested—Buckhorn free. Also Timothy, Sweet Clover, Alfalfa, all farm seeds at wholesale prices saving big money. Write today. Don't buy until you get our reduced prices, samples and 116-page catalog. A. A. BERRY SEED CO., Box 131 CLARINDA, IOWA

Seeds Wanted

Red Clover, Alsike, Sweet Clover, Rye and Vetch mixed, Ear Corn, Peas, Sweet Corn, White Kidney Beans, some varieties of Garden Beans, etc. Write us stating what you have, send samples with prices, or we will make offers. Our 1919 Garden and Field Book will be ready to mail about Jan. 1st. A request will bring you one. The C. E. DePUY CO. Pontiac, Mich.

SEED CORN FOR SALE

Golden Dent long grown and acclimated in Michigan. Deep kernels, large ear and stalk. A heavy cropper. In ear 70 lbs. \$5.00 Shelled per bu. \$4.00. C. B. COOK, R. 1, Owosso, Mich.

ICE PLOWS

Plows \$14.85 Up.
Tools Wm. H. PRAY, Mfg.
LaGrangeville, N. Y.

Wanted

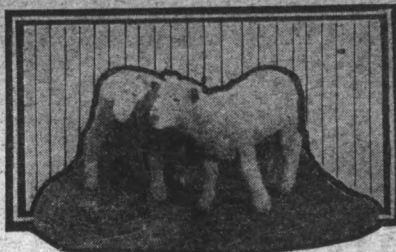
200 bushels feeding barley send price and sample at once to HEHMAN SALZMAN, Baldwin, Mich.

WE WANT VETCH.

SEND US SAMPLES YOUNG-RANDOLPH SEED CO., Owosso, Mich.

For Sale Worthy Seed Oats.

\$1.50 a bu. bags included. M. H. KNOLL, R. 3, Holland, Mich.



WHY SHEEP LOSE WOOL.

(Continued from page 47).

have been rubbed off with the scabs and wool will survive for a considerable period of time and if they come in contact with sheep they are very likely to infect them again. It is very easy to pick out a sheep that has once had scab, for where the scabs have been the wool will never grow again, no matter how well the sore spots were cured.

It is as natural for a sheep to shed its wool when warm weather comes as for a horse to shed its hair, although man has removed that tendency almost entirely. But if sheep are not kept in a condition of continual thrift, the wool not being properly supplied with nourishment stops growing. This break in the wool may be only slight, or so pronounced as to almost part the fleece in places or possibly all over the animal. When the animals begin to get more nourishment the wool will again start to grow, but the old and the new growths are so slightly connected that the old is easily rubbed off or even will sometimes drop off.

Overheating in any way will also cause wool to come off. For instance, if sheep get too much corn, especially if they have had none before, it will cause a fever which will cause the animals to lose their wool. Sheep will of course, pull and rub the wool off in spots if afflicted with ticks or lice, but this only affects the bunches pulled or rubbed off and does not loosen the rest of the fleece. Where wool is shed from any cause except scab it will grow out again, but in the case of scab it never does.

W. F. PURDUE.

OATS NOT A HOG FEED.

Please advise me how to feed oats to pigs to produce the best gains. Would you advise me to sell oats and buy corn? C. R. A.

Hogs fed a ration consisting of oats and tankage made slower gains and required more feed per pound of gain than those given corn and tankage in feeding tests at the Ohio Experiment Station. The use of oats is profitable only when the grain is much lower in price than corn.

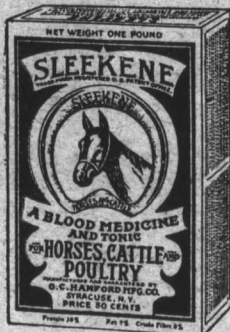
One lot fed nine parts of corn to one of tankage gained one and three-fourths pounds a day and ate four hundred and thirty pounds of feed for one hundred pounds of gain, while another lot fed oats and tankage in the same proportion gained only a pound apiece daily and required five hundred and seventy-one pounds of feed for one hundred pounds gain. Representative hogs of the two lots dressed 80.3 pounds and 75.1 pounds, respectively, which alone, if the corn-fed hogs were worth \$10 per one hundred pounds of live weight, would give the oats-fed hogs a value of only 9.48 in comparison. The pork from the corn-fed hog contained a larger amount of fat than that from the oats-fed hog.

Because of the coarse, fibrous nature of oats, animal husbandmen advise against the feeding of this grain to hogs except in small quantities and then only when oats are cheap.

Straw from the horse stable makes pretty poor manure to apply to land by itself. It is too loose and blows all around, besides having small fertilizing value. But by putting it in the drops back of the cows and getting it well mixed with their droppings, we can transform it into fine fertilizer.



A spoonful a day



to make 20 hens lay! SLEEKENE

Mix it with the mash!

MIX just a tablespoonful of SLEEKENE—that's all—in the wet mash and you've a real tonic for twenty hens. Or in dry mash, a half a package to a whole bushel of the feed. Do this and as sure as healthy hens lay more, you will get more eggs!

Poultry, to be most profitable, must be given something besides ordinary food now and then—and most of all, when winter shuts them off from Nature's remedies. When putting money into hens, why not put in a little more and then get all the money you can out of them?

Use Sleekene and watch the fine results! If your dealer can't supply you, send his name and 50 cents and a full sized package will be sent *postpaid*.

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Easy Milking

Is largely a result of a healthy udder and teats. Any condition that makes a cow restless interferes with the milk flow and makes milking hard.

To keep the udder and teats always in the pink of condition use BAG BALM, the great healing ointment. A sure, quick remedy for Caked Bag through its soothing and penetrating effect on the tissues. Great for any external hurt, chapping, cuts or inflammation.

A 60c package is a good investment.

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is a wonderful healing remedy unlike anything you ever used. For Galled and Sore Shoulders, Barb Wire Cuts, Wounds, Scratches, Split Hoofs, Sore Teats or Cows, it has no equal. I want you to try this remedy at my expense. I will send you a big



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Will offer at

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At The Farm 2 3/4 miles S. E. of Elsie, Mich.

Ann Arbor, R. R. on

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Rain or Shine

6--Reg. Percheron Mares--6
Everyone a good one and in good thrifty condition. 1 stallion coming 2 a fine one.

40--Reg. Oxford Down Ewes--40
18 are lambs, balance bred. One of the best flock of ewes to be found anywhere.

3--Scotch Shorthorn Bulls--3
2 roans, 1 red of great breeding and individuality.

A few Poland China sows will also be sold.

This sale is held because of shortage of feed and room. Everything will sell.

H. B. PETERS Prop.

Carland, Mich.

Andy Adams, Auc.

AUCTION SALE

Adjourned On Account of Sickness to

Thursday, Jan. 23, 1919

Consisting of Horses, Sheep, Farm tools, and 30 head of

Pure Bred Registered Holstein Cattle.

Headed by Forest City, Pontiac Ormsby King. Purchased from Cleveland City Farms. Sired by Peter Smalls Senior, Sire Maple Crest Pontiac Hartog, with 4 yearly tested Daughters that have an average record of 16,600 lbs. milk and 813 lbs. butter at the average age of 2 yr. 4 mo., average, 4% fat.

4 Jr. 2 yr., 3 yr. and 4 yr. olds with 24 to 26 lb. 7 day records.

First three dams of my sire average 27.65 lb. butter in 7 days, one as Jr. 2 yr. old.

His dam as Jr. 2 yr. old made 18370 lbs. milk 712 lbs. butter in year.

Her Dam 25823 lbs. milk 1223 lbs. butter.

Sires dam Ohio's first 30 lb. cow who in turn has two 30 lb. daughters one of which has a 1200 lb. yearly record and a 30 lb. Daughter.

My sire is a Grand son of Pontiac Aggie Korndyke, he is 90% white, gentle and a Perfect Individual. 15 cows 10 with A. R. O. records from 15 to 22 lb. butter in 7 days. 3 Grand Daughters of Pontiac Korndyke that made 16-18-19 lbs. butter in 7 days as Jr. 2 yr. olds, 8 Great Grand Daughters of Pontiac Korndyke 3 due right after sale. Large Perfect individuals, 10 will be fresh at time of sale, a number of others to freshen at once. Everything of serviceable age bred to herd sire. 4 young Bulls nearly ready for service. Herd free from Tuberculosis. Also 2 single unit Perfection milker used only since April. Farm 4 mi. west 1 mi. north from St. Johns reached by G. T. R. R. and Electric line from Lansing. Free transportation from St. Johns. Cattle Sale at One o'clock.

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5 Bulls 9 to 14 months old Prince Donald, Farmer and Perfection Fairfax breeding.

ALLEN BROS., Paw Paw, Mich.

Michigan Herefords

REPEATERS AND PERFECTIONS
Young stock for sale at all times.
80 head in herd, all ages.

Farm 5 miles south of Ionia. Visitors welcome. JAY HARWOOD, Ionia, Mich.
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Buy a Hereford Sire Improve your Stock
Herefords Polled and Horned blood lines embrace Fairfax. Polled Perfection and Prime Lad 9th breeding. Prices reasonable.
COLE & GARDNER, Hudson, Mich.

Herefords Bob Fairfax 49027 at head of herd. Stock for sale, either sex, polled or horned, any age. Priced right. **HARL O. MCCARTY, Sec'y. H. B. Am'n. Bad Axe, Mich.**

Francisco Farm Shorthorns

We maintain one of Michigan's good herds of Scotch and Scotch Topped cattle. They are well bred, properly handled and price reasonable. Come and see; we like to show them.
F. P. POPE, Mt. Pleasant, Mich.

Shorthorn Cattle of both Sex for Sale

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Will sell for quick sale at \$125, bull calf Experience 686277 Registered Shorthorn, calved April 20, 1918, dam Lucy 23078 out of Woodland's Choice 46280. If you want quality and lots of it with some real breeding do not lose this chance. Write
THE JENNINGS FARMS, Bailey, Mich.

Seven Scotch and Scotch Topped bulls for sale. Price reasonable.
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Registered bulls, cows and heifers—Good Scotch and Scotch-Topped for sale. In prime condition. Modern sanitary equipment. Farm 10 minutes from N. Y. O. depot, 1 hour from Toledo, Ohio. Automobile meets all trains. Write
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For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archers Hope, Avondale, Marwalton Sulton and White Hall Sulton by the Oscola Co. Shorthorn Breeders Ass. JOHN SCHMIDT, Sec. Reed City, Mich.

Shorthorn Bulls ready for service of the choicest breeding. Write me you want.
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For Sale Shorthorn Bulls of the choicest breeding and ready for service.
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Shorthorns 100 head to select from. Write me your wants, price reasonable.
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The Kent Co. Shorthorn Breeders have both males and females for sale. Ask about them.
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For Sale Best Bates Shorthorns; cows, heifers and young bulls at reasonable prices.
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OSCAR SKINNER, Pres. Central Mich. Shorthorn Ass'n., Gowen, Mich.

Scotch Shorthorn. A fine lot of young bulls for sale. Phone Pontiac 1563 or Orion Exchange. John Lesiter & Sons, R. 1, Clarkston, Mich.

Scotch Shorthorn Bulls including a roan yearling prospective herd header a grandson of Imp. Villagr. LAWRENCE P. OTTO, Charlotte, Mich.

For Sale Roan Shorthorn Bull 1 yr. old, also calves good milking strain.
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180 Shorthorn Steers ave. 1065 lbs.
170 Hereford Steers ave. 980 lbs.
2 cars of yearling Herefords ave. 750 lbs.
2 cars of Shorthorn yearlings, reds and roans. These steers are decorated and in good flesh. Wapello Co. Ia. is noted for its good cattle. Write
JOHN CARROW, R. 3, Ottumwa, Ia.

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For Sale Reg. Berkshire Sows & Boars all ages. Priced to sell.
RUSSELL BROS., R. 3, Merrill, Mich.

Registered Berkshire pigs ready to wean \$15 to \$20 each, also three service boars fine quality.
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Big type, specially fine young boars, best blood in America, born in October. \$40.00 for quick sale.

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Duroc Boars, Gilts, Big, Long, Tall, 200 lb. April 1, boars and gilts of the choicest breeding. Also an A. R. O. 1 yr. Holstein bull.
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E. D. HEYDENBERG, Wayland, Mich.

DUROC JERSEYS Nothing but for sale. CAREY U. EDMONDS, Hastings, Mich.

Duroc bred gilts for March and April farrow with quality and size. Fall pigs both sexes not akin.
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BIG TYPE DUROCS

Unrelated Trio's of fall pigs for \$80.00, single pig \$21.00 Best of breeding. A few excellent Buff Plymouth Rock Cockerels at \$3.00 each.
RUSH BROS., Romeo, Mich.

Duroc Jerseys. Large heavy-boned gilts, bred to Junior Champion boar for March and April farrow; prices reasonable. Come and see them, free livery expenses paid if not as represented.
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Like This

the original big producers



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. 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, Fortland, Michigan

Chesters Gilts bred for March, April and May farrow from mature stock of the large prolific kind. Satisfaction guaranteed.
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O. I. C. & Chester White Swine Strictly Big Type with QUALITY. Have a few spring pigs either sex for sale. They are of the right stamp, good enough to be shipped O. I. C.
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8 Large Type O. I. C. spring boars also 2 prize Jr. yr. boar Mich. State Fair 1918.
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O. I. C.'s big type serviceable boars. Yearling sows and gilts bred for spring farrow.
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O. I. C.'s a few 250 lb. bred gilts other lighter ones; service boars sold. I ship O. O. D. and pay express.
F. C. BURGESS, R. 3, Mason, Mich.

O. I. C. Big type April boars and bred gilts, with quality from large litters.
W. B. McQUILLAN, Howell, Mich.

O. I. C. Boar, 14 months old. Large fall pigs of either sex.
O. J. THOMPSON, Rockford, Mich.

O. I. C. Serviceable boars sold. Gilts bred for March and April farrow.
H. W. MANN, Dansville, Mich.

O. I. C.'s bred gilts all sold, have some good fall pigs either sex not akin and 2 last June boars. farm 1/4 mile west of Depot.
OTTO B. SCHULZE, Citizens Phone 124, Nashville, Mich.

BIG TYPE POLAND CHINAS Spring boar and gilts. Also fall pigs.
Hillcrest Farm, Kalamazoo, Mich.

FOR 25 YEARS This establishment has been head quarters for Big Type Poland Chinas. We have a nice lot of boars and sows of strictly big type breeding at very low price. Let me know what you want. Bell phone.
JNO. C. HUTLER, Portland, Mich.

Large type P. C. Largest in Mich. Boars all sold. 20 L. Bred gilts sired by and bred to the best boars the breed can produce, with dams of equal merit, extreme size with quality, come and see them, free livery, expenses paid if not as represented. W. E. Livingston, Farms, Mich.

Big type Poland Chinas. Spring gilts of the best of breeding. With quality from 1000 lb. sire's and 800 lb. dam's. Will be bred to a great son of the noted 2800 Gertdale Jones. Also fall pigs.
W. BREWSTER & SONS, R. 5, Elsie, Mich.

Big Poland Chinas with quality. Spring, summer, and fall pigs, both sex, and bred sows, for sale.
C. A. BAUMGARDNER, R. 2, Middleville, Barry Co., Mich.

Big type Poland China yearling sow bred for April farrow, also sow pigs Aug. and Sept. farrow. Certificates of registry with every hog from
LOVE CEDAR FARM, Pontiac, Mich.

Big Type Poland Chinas, Breeding gilts to Bob-o-Link, by The 2nd Big Bob. S. C. B. Leghorn Cocks and Cockerels.
O. L. WRIGHT, Jonesville, Mich.

Large Type P. C. boars all sold. Spring gilts and young Luried sows, bred for March and April farrow. Free livery from Augusta.
W. J. Hagelshaw, Augusta, Mich.

Michigan's Champion herd of Big Type P. C. bred sows and fall pigs. Come and see these fine quality.
E. R. LEONARD, R. 3, Box 53, St. Louis, Mich.

Big Type Poland Chinas. Spring boars for sale. Booking orders for bred gilts. Inspection invited.
L. L. CHAMBERLAIN, Marcellus, Mich.

L.T.P.C. Gilts bred for April farrow. Fall pigs of either sex; inspection invited.
A. A. FELDKAMP, Manchester, Mich.

Big type P. C. Big boned fellows from Iowa's greatest herds, special prices on spring boars and choice bred gilts.
E. J. MATTHEWSON, Burr Oak, Mich.

Special Sale on big type fall pigs also yearling big type boar of extra size form and finish.
ROBERT NEVE, Plerson, Mich.

Mammoth Poland Chinas. March, April, boars and gilts. Cholera immune, double treatment. Clyde Weaver, Mgr., Marshall, Address, Ceresco, Mich.

A FEW choice, large type P. C. Spring boars and gilts, also summer pigs.
OLYDE FISHER, R. 3, St. Louis, Mich.

L.S.P.C. Get a boar, pig sired by Smooth Jumbo the Defender. H. O. Swartz, Schoolcraft, Mich.

Big Type P. C. boar and bred gilts. Choice Aug. pigs at a bargain.
A. A. WOOD & SON, Salina, Mich.

Hampshire spring boars at a bargain, bred gilts now ready to ship.
JOHN W. SNYDER, R. 4, St. Johns, Mich.

Hampshire Hogs The International Grand Champion Hog of 1918, both sexes for sale. Spring deliveries booked now.
ELI SPRUNGER & SON, Saginaw, W. S. Mich.

SHEEP

To The Kids of Mich. I have 15 beautiful registered and Hampshire and Shropshire ewes that will have lambs this spring. I wish to sell them to you and buy back the ram lambs next fall at a mighty good price. Start now in a small way. Liberty Bonds taken. Write at once for particulars.
ROPE KON FARM, S. L. Wing, Owner, Kinderhook, Mich.

200 Bred Ewes Choice natives, coming two years, bred to Shrop Rams, in lots to suit.
ALMOND B. CHAPMAN, South Rockwood, Mich.

Shropshire Rams Yearlings and Ram Lambs of Quality.
B. D. KELLY & SON, Ypsilanti, Mich.

FOR SALE SHROPSHIRE LAMBS, ewes or rams.
ARMSTRONG BROS., R. 3, Fowlerville, Mich.

OXFORD Down Ram lambs, also a few ewe lambs. Berkshire both sexes. Booking orders for fall pigs.
CHASE STOCK FARM, R. 1, Marietta, Mich.

For Sale Registered Oxford Down rams and ewes; can be seen at FAIRVIEW STOCK FARM.
Fred Wolfe, Snover, Mich.

HORSES

Saginaw Valley STOCK FARM Belgian and Percheron Stallions and Mares and registered Holstein Cattle, of the best breeding, for sale.

Eli Sprunger & Son, Saginaw, W. S. Mich.

Horses Will Be Horses Soon We have on hand at all times a choice selection of young Percheron Stallions.
PALMER BROS., R. R. Orleans, Belding, Mich.

Percherons, Shorthorns and Duroc Jersey Hogs.
J. M. HICKS & SONS, R. 2, Williamston, Mich.

Additional Stock Ads. on Page 71

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, January 9.

WHEAT.

Food Administrator Hoover who is now in Europe checking up the food requirements of continental Europe for the winter and spring emphasized in a recent report the urgent need of large food shipments from the United States to save many people from starvation. He also reports that the allied nations are morally bound to assist in upholding the United States guaranteed minimum price for the 1919 wheat crop. Further news touching upon the economic phases of the wheat situation comes from Washington where the house appropriations committee has acted favorably on a bill providing \$100,000,000 to aid in feeding unfortunate Europeans. These reports have given a bullish tone to the wheat trade. The visible supply of America shows an increase for the past week of 2,486,000 bushels. One week ago No. 2 red wheat sold on the Detroit market at \$2.17 per bushel. Present prices here are:

No. 2 red	\$2.30
No. 2 mixed	2.28
No. 2 white	2.28

CORN.

The news items referred to above had a quickening influence in corn trading early this week and prices jumped to new records for the season. If America stands behind the foreign food program all our supplies will be required and good prices ought to be maintained. Receipts of corn have not been large and there is a feeling that farmers will cease to deliver at country points, should any material decline take place in quotations. The American visible supply shows a decrease for the week of 54,000 bushels. Usually at this season receipts are sufficiently large to increase the supplies held at primary markets. One year ago No. 2 corn sold on the local market at \$1.88 per bushel. Present prices here are:

No. 3 corn	\$1.53
No. 3 yellow	1.58
No. 4 yellow	1.53
No. 5 yellow	1.50
No. 6 yellow	1.44
No. 3 white	1.58

The market in Chicago is firm with No. 4 yellow \$1.47; January \$1.48; May \$1.41½.

OATS.

This cereal is higher with corn and wheat. The change is largely due to the influence of the other grains, although small receipts have given the trade a firm tone on its own account. The United States visible supply shows an increase of 819,000 bushels. The demand is normal with millers buying in only a small way here on the local market. One year ago standard oats sold at Detroit at 83½¢ per bushel. Present prices are:

Standard	74½
No. 3 white	74
No. 4 white	73

RYE.

No change has taken place in prices for rye. Crop reports indicate that the new crop is in very good condition. The visible supply for the country shows an increase of 432,000 bushels for the week. At Detroit cash No. 2 is quoted at \$1.62 per bushel.

BARLEY.

Transactions in barley have been few in number and the trade is very slow. The visible supply for the week shows an increase of 482,000 bushels. Detroit prices for cash barley are as follows: No. 3, \$2; No. 4, \$1.95; feeding barley \$1.85@1.90 per cwt.

BEANS.

There has been a fair movement of bean supplies to eastern points, and since the demand has not revived from the holiday season, prices there have eased off from those reported a week ago. In New York choice pea beans are quoted at \$10.25 and medium at \$10.25. The Detroit market is inactive with quotations unchanged. Immediate and prompt shipment are quoted here at \$9 per cwt. at shipping points. The Chicago market is in a firm position, showing improvement on the buying side, and firmer prices, although offerings are fairly large. Pea

beans, hand-picked, choice to fancy are quoted there at \$9@9.25, and the best red kidneys at \$12@12.50.

FEEDS.

Another advance is reported in feed prices. Both mill and corn feeds are up. The rapid advance in feed quotations for the past fortnight is the result of the withdrawal of federal control over prices on these products. Detroit quotations to jobbers for feeds in 100-lb. sacks are as follows: Bran \$50; standard middlings \$50; coarse corn meal \$63; cracked corn \$64; chopped feed \$52.50 per ton.

SEEDS.

There is not much doing in the seed market, and prices are a shade higher as follows: Prime red clover \$25.25; March \$25.50; alsike \$19.25; timothy \$5.10. At Toledo prime clover seed is

quoted at \$25.50; alsike \$19.60; timothy \$5.10.

APPLES.

But few changes have been noted in the apple market situation. The tendency, however, is toward a firmer market. The volume of this fruit being exported gradually increases and this is having a slightly bullish influence on the trade. Jobbers in Detroit are paying \$4.50@6.25 for Baldwins; \$6.50@6.75 for the best Kings and \$7 for Yorks.

POTATOES.

Further improvement in the potato markets is noted. The cold weather has been an important factor in bringing about better prices. Quotations are slightly higher at Detroit this morning with Michigan U. S. Grade No. 1 round whites in 150-lb. sacks at \$3@3.15 and a few small lots at \$3.25.

At Cleveland the same grade from this state, sacked, brought \$2.25 per cwt. At Philadelphia \$2.30@2.40; at New York \$3.50@3.60 per 150-lb. sack; at Buffalo \$2.10@2.15 per cwt; at Pittsburgh \$2.15@2.25; at Indianapolis \$2.15@2.20; at Columbus \$3.25@3.40 per 150-pound sack. At Chicago the demand and movement are good and the prices have advanced. Michigan stock is selling there at \$2.10@2.25 for U. S. grade No. 1 round whites.

HAY.

There is a brisk demand for hay, and receipts continue in small volume. Prices are firm with those reported last week. Detroit quotations are as follows:

No. 1 timothy	\$28.50@29.00
Standard timothy	27.50@28.00
No. 1 mixed	25.50@26.00
No. 1 clover	24.50@25.00

Pittsburgh.—The market here shows buyers to be getting anxious about their supplies, while receipts have been reduced to a minimum. Dealers anticipate higher prices as a result. Current quotations are as follows:

No. 1 timothy	\$30.00@30.50
No. 1 light mixed	27.50@28.50
No. 1 clover mxd	27.50@28.50
No. 1 clover	26.50@27.50

BUTTER.

Butter prices have advanced this past week. The markets are firm at the new level. Receipts are running about steady with those of last year at the important receiving centers. Chicago prices have advanced 1½¢ over last week to 59¢@68¢ for creameries. The New York figures have gone up to 70½¢, while in Detroit fresh creamery firsts advanced to 64½¢@65½¢. Comparing prices with former years, January 5, 1918, the New York price was 52¢; on January 6, 1917, 40¢; on January 6, 1916, 33¢.

EGGS.

Larger egg receipts and a small demand have resulted in a decline since early this week. At Detroit fresh firsts are now quoted at 61¢; extra firsts in new cases 62¢; storage eggs 51¢@52¢ to jobbers. At Chicago values are a little lower, with firsts at 60¢; ordinary firsts 58¢@59¢; at mark, cases included 58¢@59¢. New York price for nearby western stock ranges from 66¢@80¢; in Philadelphia western extra firsts are quoted at \$20.40 per case.

POULTRY.

This year seems to be an exception to the usual condition of the poultry market following the holiday trade. Practically all of the markets are well cleaned up, and in some instances the prices show an advance with demand strong. At Detroit live springers are quoted at 28¢@32¢; hens 32¢@33¢; small hens and leghorns 28¢@30¢; roosters 20¢@21¢; geese 30¢@31¢; ducks 35¢@36¢; turkeys 35¢@36¢.

DETROIT CITY MARKET

Comparatively few farmers have offered products on the city markets this week. The demand is brisk and prices are being well maintained. Potatoes sold at 75¢@1.15 per bushel; apples \$1.50@2.50; cabbage at around \$1; onions 75¢@1; parsnips \$1; rutabagas 75¢; turnips 75¢@1.25; celery 60¢@90¢ per dozen.



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Live Stock Market Service

Reports for Thursday, January 9th

BUFFALO.

On this market today pigs sold at \$18 and other grades of hogs at \$18.50. The top prices for lambs were \$17.50@17.75; calves \$21.50. No cattle sales were reported.

CHICAGO.

Cattle.

Receipts 20,000. Market steady. Good to prime choice steers \$16.40@20; common and medium butchers at \$9.75@16.40; heifers \$8.25@14.25; cows \$8@13.50; bologna bulls \$8.40@12.75; canners and cutters \$7@8; stockers and feeders \$10.50@14; do medium \$8@10.50.

Hogs.

Receipts 63,000. Market weak and 10c lower. Tops \$17.95; bulk of sales \$17.55@17.85; heavy \$17.80@17.95; mixed and light \$17.65@17.90; packers' hogs \$17@17.50; medium and heavy at \$17.40@17.60; light bacon hogs \$17.20@17.85; pigs good to choice \$16.25@17; roughs \$16@16.90.

Sheep and Lambs.

Receipts 36,000. Market slow. Choice to prime lambs \$17.25@17.40; medium and good lambs \$15.50@17.25; culls \$11.75@14.25; medium and good choice feeders \$14@15.25; choice yearlings \$14.50@14.75; medium and good yearlings \$12@12.50; wethers medium and good \$10.75@12.25.

Reports for Wednesday, January 8th

BUFFALO.

Cattle.

Receipts five cars; steady; prime heavy steers \$17@18; best shipping steers \$14@15; medium do \$13@14; coarse and common \$10@11; best yearlings, 950 to 1000 lbs, \$16@17; light yearlings, good quality \$14@15; best handy steers \$12.50@13.50; fair to good kinds \$10@11; handy steers and heifers, mixed \$11.50@12.50; best fat cows \$9@10; butcher cows \$7@8; cutters \$7@7.50; canners \$6.25@6.50; fancy bulls \$9@10; butcher bulls \$8@9; common bulls \$6@7; best feeding steers \$10@10.50; medium feeders at \$8.50@9; stockers \$7@8; light common \$6@7; best milkers and springers \$10@15; mediums \$75@90; common \$50@70.

Hogs.

Receipts 20 cars; strong. Heavy and yorkers \$18.50; pigs \$18@18.25.

Sheep and Lambs.

Receipts five cars; strong; lambs at \$18; yearlings \$15@15.50; wethers at \$11.50@12; ewes \$10.50@10.75.

Calves.

Market today is steady; tops are at \$21.50; grass calves \$7.

CHICAGO.

Cattle.

Supplies for the first half of the week, are 14,000 head larger than for the same part of last week, estimating the arrivals today at 18,000 head. Receipts for three days foot up 67,200 head. The market has been alternately higher and lower. Weakness prevailed on Tuesday, following a good Monday market, but Tuesday's decline was regained today, and prices averaged higher than late last week. Some choice weighty steers brought \$19.75,

being better in quality than any recent receipts, and some prime steers were held for \$19.85@20. Sales were made all the way down to \$10.50@12.50 for common light steers, with scattering small sales as low as \$7.60@10 for inferior little steers. Butcher cows and heifers were salable at \$8.50@15.25, and canning cows and cutters sold at \$7@8.45, bulls selling at \$7.50@13 and stockers and feeders at \$7.75@12.25, with a few prime selected fleshy feeders selling at \$12.50@13.50 or higher. Calves had another advance, the better class of light vealers bringing \$17@17.50, sales being made down to \$16.25 for fair lots and heavy calves going at \$8 and over.

Hogs.

The Wednesday receipts are estimated at 48,000 head, and 10,661 were carried over unsold last night. Receipts for three days foot up 140,250 head, comparing with 124,721 for the same time last week. Prices are 10@15c higher than yesterday, with the bulk of the hogs bringing \$17.55@17.95 and an \$18 top, the commoner lots of heavy packers selling at \$16.85@17.20. Pigs sold at \$14.50@17. Western packing for the winter season beginning October 27 amounts to 9,125,000 hogs, comparing with 6,295,000 for the like period a year ago. Last week's western packing aggregated 977,000 hogs, comparing with 649,000 a year ago.

Sheep and Lambs.

Estimating the Wednesday arrivals at 20,000 head, the receipts for the first half of the week amount to 70,285 head, comparing with 51,226 a week ago. Prices continue to advance rapidly, and today saw lambs selling at \$11.50@17.40, yearlings at \$12@14.75, wethers at \$10@12 and ewes at \$5@11.



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The trenches in Flanders are now empty and it is no longer necessary to keep supplying the boys "over there" with U. S. "Protected" rubber boots.

So, instead of making trench boots almost exclusively as we have been doing, we have reverted to our before-the-war manufacturing program, and will soon make up the shortage that exists in the supply of heavy-service, double-duty U. S. "Protected" rubber footwear.

Uncle Sam has furnished "our boys" with the best rubber boots that money can buy, and, in both the Army and Navy, there probably are as many U. S. "Protected" rubber boots as all other brands combined.

Outdoor workers everywhere recognize the dollar-for-dollar value of "U. S." quality. It means rubber boots

of the sturdiest construction, reinforced where the wear is greatest, yet entirely comfortable. Longer wear insures saving of money.

Every pair of U. S. "Protected" rubber boots bears the "U. S. Seal"—trade mark of the largest rubber manufacturer in the world. Look for it. It is your protection.



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