

# MICHIGAN FARMER

AND LIVE STOCK JOURNAL  
PUBLISHED WEEKLY.  
ESTABLISHED 1843.

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

VOL. CXLV, No. 22  
Whole Number 3864

DETROIT, MICH, SATURDAY, NOVEMBER 27, 1915

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## A Region of Agricultural Progressiveness

Northwestern Michigan Is Young Agriculturally But Is Producing Results Which More Than Rival the More Developed Farming Sections.



Corn Does Well There.

MICHIGAN has, geographically considered, a most unique location. On her east side she has water and the Canadian border, and on the north and west, water. She is really a large peninsula sticking out in the largest and most important inland body of water in the world. In a cosy corner by herself, out of the main pathway of the western march of civilization, she has not been as thoroughly settled as most of her sister states. In the early days crossing water was a much greater task than it is now, and therefore westward travelers hesitated about taking a westerly course via Michigan, but some happened along through the southern part of the state and liked it so well that they staid. Southern Michigan is therefore well established agriculturally but the northern part of the state has yet many agricultural resources to develop.

This article is to acquaint you with the development and possibilities of the northwestern part of this state in an agricultural way. Careful investigation reveals that this section has unlimited advantages, especially for one seeking a new farm home.

### An Ideal Geographical Location.

The geographical location, which was a hindrance in the early settlement of the state, has given us at present in the northern part of the state the cheapest good land near the

great middle west markets and is becoming one of this section's greatest assets. The temperature influence the water has on this section is of untold advantage, making it possible to grow such tender fruits as the peach in the northernmost parts. Water frontage, of which western Michigan has an abundance, is becoming more valuable every day for both commercial and residence purposes. The lake also affords water transportation, which is the cheapest there is, and when we consider that the water routes which touch northwest Michigan's shores go to the country's greatest markets, we come to realize what an asset this makes from a commercial standpoint.

The section under discussion comprises about one-fifth of the total area of the state but, according to the 1910 U. S. census, contains only 10 per cent of the state's improved farm land. Or, referring to the section itself, only

land, land which will grow well any of the regular farm crops. A very large amount of the remaining 40 odd per cent can be fitted for agricultural purposes by a little intelligent care. Where the locations are good for orchard purposes some of these lighter soils will produce productive orchards for which this section is already famous.

Some of the light lands, however, should not be used for cultivation, as it will take too much time and energy to make them produce profitable cultivated crops. The jack pine plains are soils of this type. These plains, however, instead of being detrimental are actual assets to this section. Experience has shown that they are ideal for pasture purposes, and as the great pastures of the west are fast disappearing and the future outlook is for an increasing price of meat, these plains will have great value for



Rye is One of the Chief Crops.

following percentages which have been derived from the census figures of 1910, are therefore given as evidence that northwestern Michigan is due a serious consideration by those who wish to buy farms.

With only 10 per cent of the improved land of the state, this section produces 38.9 per cent of its potatoes; 34.6 per cent of its rye; of peas 23.6 per cent; corn 17.4 per cent; hay and forage 16.8 per cent; oats 13.8 per cent; beans 10 per cent; total cattle 34.1 per cent; dairy cattle 21.8 per cent, and swine 12 per cent. These figures have added significance when one considers the fact that Michigan stands prominent among the states of the union in the production of many of these crops. She is the banner state of the country in the production of rye, second in the production of potatoes, eighth in hay and forage, ninth in oats, first in beans and second in the production of peas.

This flattering showing indicates that not only has this section produced far in excess of its share of the farm crops of the state, but it has produced well in those crops for which the state has a reputation. This section therefore, has done much to make the state famous as an agricultural state.

While northwestern Michigan proves up well in the production of farm (Continued on page 474).



Its Fruit Crops have made this Part of the State Famous.

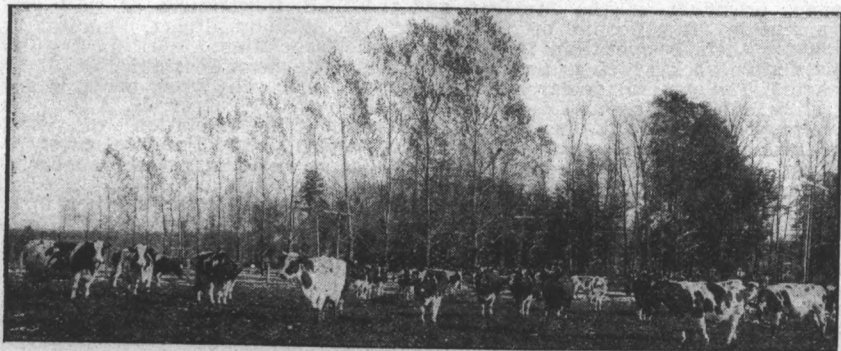
one-third of the 7,073,280 acres of land comprising this section is improved. This is an indication of the fact that there is still a lot of land awaiting agricultural development.

The soil, which is always an important consideration when a new farm is in mind, is variable in this section, but a close study of the soil map of the state, prepared by the state geologists with assistance from the U. S. Geological Survey, shows that nearly 60 per cent of it is very good agricultural

land. The economical production of beef. As the quality of meat produced on the plains is good and on account of the close proximity to the markets, these plains have a value which is not appreciated at present.

### Results to Show Natural Productivity.

There is nothing more convincing than results, the evidence of what has already been done, and there is no more reliable or unprejudiced evidence in this regard than the estimates of the United States Census Bureau. The



Dairy Cows and Alfalfa Make a Good Combination; Both do well in North western Michigan.



# The Michigan Farmer

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TELEPHONE MAIN 4335.NEW YORK OFFICE—41 Park Row.  
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### TERMS OF SUBSCRIPTION:

One year, 52 issues.....50 cents  
Two years, 104 issues.....1.00  
Three years, 156 issues.....\$1.25  
Five years, 260 issues.....2.00

All sent postpaid.

Canadian subscriptions 50c a year extra for postage.

### RATES OF ADVERTISING:

40 cents per line agate type measurement, or \$5.60 per inch (14 agate lines per inch) per insertion. No advt in series for less than \$1.20 each insertion. No objectionable advertisements inserted at any price.

Mem Standard Farm Papers Association and Audit Bureau of Circulation.

Entered as second class matter at the Detroit, Michigan, postoffice.

DETROIT, NOV. 27, 1915

### CURRENT COMMENT.

The joint meeting of the National Potato Association and the Michigan State Potato Association to be held at Grand Rapids, December 1-2-3, 1915, is the first of the important farmers' meetings of the present season. The program, which is published in another column, promises to be of exceptional interest to a large percentage of Michigan Farmer readers.

The potato crop is an important cash crop in this state, and the partial failure of the crop in some sections of the state the present year makes this meeting and many of the addresses which will be given during the three days' program, of more than ordinary general interest to potato growers throughout the state. The national and state potato shows, which will be held in connection with the meeting, will afford a valuable opportunity to study varieties and types of tubers as they are placed in this competitive show by competent judges. It would be difficult to provide a better opportunity for the general broadening of knowledge relative to the production and sale of potatoes than will be afforded by this meeting and the shows held in connection with it.

It is a credit to the State Potato Growers' Association and a matter of congratulation to the potato growers of the entire state that the meeting and show of the National Potato Association is to be held jointly with that of this local organization. The potato growers of Michigan should respond by making this first meeting of general importance to the farmers of the state for the current year a marked success from both the standpoints of attendance and interest.

### Seasonal Arguments advanced for Good Roads.

Of all the arguments advanced for the permanent improvement of highways the most forceful at this season of the year are the completed stretches of improved roads. With the coming of the first snows following late fall rains before the ground is frozen, the dirt roads, especially where there is poor natural or artificial drainage, become badly cut up, forming in the worst places deep beds of mud which are nearly impassable, while the ordinary dirt road is in poor condition all during the late fall, and in still worse condition during the early spring. In comparison with this, on stretches of improved road from which adequate provision has been made for the conduct of water, the hard surfacing remains impervious to the wear of

traffic, even under the most trying of seasonal conditions.

To travel over a stretch of improved road of this kind which is in perfect condition, then plod over the soft and water-soaked dirt road and plow through the mud of poorly drained spots and low places is an experience which tends to promote sentiment for the improvement of main traveled roads to a greater extent than any amount of argument or personal solicitation could do.

Fortunately the good roads movement has become sufficiently general so that the people of practically every community in the state are having daily experiences of this kind right now and will continue to have them, as seasonal conditions recur, until the ground is again settled next spring. The argument of good stretches of road well cared for is strongly for more good road and is an argument which is certain to result in a more rapid improvement of main traveled roads each succeeding year.

### Profitable Winter Work.

When the season's campaign has closed and preparations for the routine work of winter are completed, there is upon most farms considerable leisure time which the owner and members of his family may employ as they see fit. This season favors a greater degree of social activity in the country than is possible with the strenuous work of the active farming season. A reasonable amount of time spent in social intercourse with one's friends and neighbors is undoubtedly time well employed, particularly when it can at the same time be made an advantage in a business way as it can in visiting almost any farm home, if one is on the lookout for practical suggestions. While it is not desirable to always be talking "shop," the opinions of one's neighbors can be drawn out along lines of mutual interest to the business advantage of both, without detracting from the sociability of friendly visits or neighborhood affairs.

This, however, is but the beginning of the profitable employment of time during the winter season in the broadening of every farmer's technical knowledge of agriculture, particularly the special line of agriculture in which he may be engaged and the studying of individual problems, the correct solution of which will add materially to the success of his business. This study should include the thorough reading of his trade paper, the attendance of farmers' institutes and other similar meetings, including the one-week agricultural school where such an event is held or can be promoted in the community and, under favorable conditions, particularly where the young farmers and their wives can arrange to spend the time away from home, the taking of short courses of lectures along some special line of agriculture in which they are interested, such as are now offered by the agricultural colleges of practically every state.

Satisfaction with one's present attainments means the end of progress. Diligent search for knowledge which will aid the possessor in becoming a better farmer or farm manager will result in continued progress in this direction. Time expended in adding to one's store of knowledge during the winter season will yield better returns than even the most strenuous labor at farm work during the busier summer season.

Maximum profits from the operation of a farm are not always reflected in maximum yields. Farm surveys made with a view of revealing the causes for success or failure in the solution of the vexed problems of farm management uniformly show that profits increase as yields per acre increase until the yields are considerably above the av-

erage for the locality in which the survey is made, but that beyond this point increased yields are obtained at a loss.

So many factors enter into this problem that no definite rule can be laid down for general guidance. The problem of promoting larger yields is, like most other farm problems, a matter for individual study and solution, but it is a safe assertion that the maintenance of a degree of fertility in the soil which will give largely increased yields without materially increasing the cost of production, will prove profitable upon every farm. For this reason, the general subject of soil fertility is one of a few topics which will be emphasized in these columns during the coming year. This is a question which may well be made a matter for special thought and study by every Michigan Farmer reader during the winter season.

### BEWARE.

We have been advised by some of our subscribers of the activities of agents for a map publishing concern who have been soliciting subscriptions to a county directory or atlas, or something of that kind. Their scheme is to get some farm publication interested, then agree to furnish a five-year subscription and a directory, when completed, at a certain price, thus securing the farmer's signature. It seems they make promises which are not carried out as the subscriber expects. The publishers of the Michigan Farmer were approached with the scheme, but because of its uncertain features turned it down. We wish to warn all farmers to be careful and know exactly what they are signing before putting their signature to any such proposition.

### HAPPENINGS OF THE WEEK.

#### Foreign.

The European War.—The announced objective of the central powers of Europe to launch a campaign against the Suez Canal and Egypt for the purpose of forcing Great Britain to terms of peace, seems more possible of realization than a week ago. The Austro-German armies have forced the northern Serbian army to the Montenegrin frontier and have, according to Berlin reports, already delivered supplies and troops in Constantinople to relieve the Turks on Gallipoli peninsula. It is hinted that the Allies will abandon the Dardanelles campaign. On the other hand, Serbians have won an important victory 30 miles south of Nish and British forces have arrived to assist the French and Serbians in the defense of Monastir, the capital of Macedonia. The Allies have also inaugurated a commercial blockade of Greece until such time as the Grecian government gives a satisfactory answer as to her position in the conflict, either by mobilizing her armies and continuing friendly relations toward the Allies or by joining with them in upholding her treaty obligations with Serbia by opposing the Austro-German forces. The Italians continue their effort to capture Gorizia with increased promise of success. On the Russian front the Czar's forces have recaptured territory lost a week ago on the Sty River. Farther to the north the armies are idle because winter weather makes the movement of troops impossible. No important changes are observed on the western front. Violent artillery engagements have taken place, however, at points throughout the entire western fighting line.

An appeal is being made by Gen. Carranza, president of the Mexican government to the people of that country for their co-operation in the reconstruction work which is now being started. The general declares that the task will be a long and arduous one. Property seized by Carranza's forces from persons not guilty of offenses against the government will be returned to them, but that belonging to those guilty of traitorial acts will be confiscated.

A new and stringent excise decree against the retailing of liquor is being enforced in the city of Mexico by the new government.

#### National.

A vigorous movement to punish the men responsible for arson and bomb plots designed to prevent the manu-

facture and exportation of war munitions has been launched by the federal government. An appeal is being made to state authorities to assist in the work. Every suspicious incident is being investigated and an abundance of evidence has already been gathered by secret service men.

Improved methods of producing radium have been developed by the Bureau of Mines. The new methods have reduced the production expense to one-third the former cost.

Additions to steel plants in Pittsburgh to cost \$1,250,000 are now under the process of construction. The wonderfully increased demand for standard and special steel products has made necessary the unusually large output at the present time.

Frank E. Wetmore has been appointed by Governor Ferris as Probate Judge for Oceana county to fill the unexpired term of Van Wickie, resigned.

One hundred thousand dollars has been raised by citizens of Dallas, Texas, to secure for that city the 1916 democratic national convention.

Heavy seas broke down the bulkheads protecting the town of Hammond, Ore., and completely destroyed all communications with the outside world last Sunday.

The capsizing of a 24-foot motor boat off Rockaway Point, New York harbor, November 21, resulted in the drowning of five men.

### PROGRAM OF NATIONAL AND STATE POTATO MEETING.

Wednesday, December 1.

Morning Session.

Address of welcome, Mayor George Ellis.

Response, A. L. Hopkins, President Michigan Potato Association.

Address, W. A. Martin, President National Potato Association.

Report of Secretary-Treasurer, National Potato Association.

Report of Secretary, Michigan State Potato Association.

Report of Treasurer, Michigan State Potato Association.

Afternoon Session.

Address, "How to Make Potato Growing Profitable," E. R. Smith, President New York Potato Growers' Association.

Address, "Potatoes and Live Stock," W. F. Raven, Extension Representative in Live Stock, M. A. C.

Address, "Standardizing Potatoes," J. W. Hicks, President Wisconsin State Potato Growers' Association.

Evening Session.

Illustrated address, "Seed Inspection and Certification," Dr. W. A. Orton, Washington, D. C.

Illustrated address, "The Late Blight Situation," Dr. G. H. Coons, M. A. C.

Illustrated address, "Soil Problems in Connection with Potato Growing," Prof. H. G. Bell, Chicago, Ill.

Thursday, December 2.

Morning Session.

Address, "Industrial Uses of Potatoes," Dr. H. E. Horton, Chicago, Ill.

Discussion, Dr. H. C. Gore, Washington, D. C., E. Salich, Chicago, Ill.

Address, "Boys' and Girls' Club Work with Potatoes," Prof. E. C. Lindemann, M. A. C.

Afternoon Session.

Paper, "Grading and Marketing Problems," S. J. Donaldson, Pocatello, Idaho.

Address, "Ways of Improving the Marketing of Potatoes," E. Percy Miller, Chicago, Ill.

Address, "Production of High Grade Seed Potatoes," Low D. Sweet, Carbondale, Col.

Address, "Seed Potatoes and Diseases," Dr. Ernst Bessey, M. A. C.

Evening Session.

Banquet, Pantiand Hotel.

Friday December 3.

Morning Session.

Address, "Work of State and Local Organizations," Prof. J. G. Milward, Secretary Wisconsin Potato Growers' Association.

Address, "Relation of the National to the State and Local Associations," C. W. Wald, Secretary Michigan State Potato Association.

Address, "Potato Investigations Under Way by the Experiment Stations and the U. S. Department of Agriculture," Dr. William Stuart, Secretary National Association.

Afternoon Session.

Paper, "Research Work with Fusarium Wilt," R. W. Goss, M. A. C.

Address, "The Relation of the County Agent to the Potato Grower," Hon. Jason Woodman, Kalamazoo, Michigan.

How Can we all Pull Together for "Better Potatoes, Better Marketing and Better Profits?" Dr. E. B. Mumford, State Leader of County Agents, M. A. C.

Business session, National Potato Association; report of committees; election of officers.

Business session, Michigan State Potato Association.



## LILLIE FARMSTEAD NOTES.

It is well enough to discuss the various reasons for and against fall plowing. There are some reasons against it to be sure, and there are many for it. But the principal reason is this. If you want to get in a good bunch of spring crops and get them in on time, and if you want the greatest assurance of good crops, then fall plow all you can. It is impossible to do all the plowing early in the spring. Late spring plowing is about the riskiest kind of farming. Some years it will prove all right, but a majority of years the crop will be less by spring plowing than by fall plowing. The reason is because a better and more natural seed bed can be prepared on fall-plowed land than on spring-plowed. Our clay soil, if planted late in the spring for corn, will some years produce almost no crop at all. Several years, in my recollection, on the clay spots it was next to impossible to get germination. I will admit that I have seen seasons where spring plowing was the best, owing to too much rain in the spring, but this is unusual. So we are trying to do all the fall plowing possible. The tractor has been doing so much other work, threshing wheat, hulling clover, etc., that as yet it has only <sup>plowed</sup> <sup>weeded</sup> 12 acres. This work, however, is nearly done now (November 13), and if this open dry weather will only continue we shall endeavor to make it pay good interest on its cost.

In the township of Wright, where I operate 260 acres of land, the people voted two years ago to work out the road work. This takes the teams away from the fall plowing. The plans were all made to do this work earlier, before the crops were removed, but excessive rains prevented hauling the gravel then, and so we must do it now. It is slow work plowing this fall, the ground is so hard. Heavy rains earlier packed the soil like a sledge hammer, and now it is dry and hard. Some farmers here have given up plowing until it rains. We haven't done that yet, but it is a slow job.

## Hulling Clover.

Clover seed has not been a good crop in this locality for many years. Just why I do not know. If the season is favorable for a second growth of clover it is almost invariably too wet to have the blossoms fertilize. Many years it is so dry there is little or no second growth. But always the clover does not seem to head out evenly. Some heads are so much earlier than others that they ripen and dry up before some are headed out. Clover did not use to act this way. As I have stated before, I clipped one field about June 10 and did not save it for hay. The second growth came on fine and was a beautiful sight when in full blossom. A friend said it was too thick for a seed crop. Many of the heads seemed to be fairly well filled. We lost some of it; cut it just before those heavy rains in September. It was hammered into the ground. Some of it sprouted before we could fork it over. Twice we had to handle it with a fork to keep it from sprouting and rotting.

The proposition was to get it hulled. Of late years people who own clover hullers are not around looking after jobs. You have to go to them and coax them to do it. I don't like to do this. The last hulling I had done I had to hire the huller by the hour and I furnish the power. It was mighty expensive. If seed hadn't been high I would have lost money. I learned from a friend where there was an up-to-date huller that could be bought at a reasonable price. The man bought it two years ago, and had never used it much. I purchased it. It is equipped with self-feeder and wind stacker, also recleaner. Of course, I was slow in getting it and slower still in getting to work. We have been hulling this week. While

the clover is dry and nice it has been an awful week for the job. The wind has blown every day hard, first from one quarter and then from another, sometimes almost a hurricane. We have spoiled two drive belts and hulled about 60 bushels of seed in four days. The machine, however, does splendid work. It is a slow job in bushels, for we must put through so much clover to get a little seed. The wind blew so only little jags could be hauled. We would not stop for fear of rain. It will take part of next week to finish. We have just about one-half a crop. I think three bushels per acre a crop. We are getting just about one and a half bushels per acre.

COLON C. LILLIE.

## WATCH FOR GRAIN WEEVIL.

The Ohio Experiment Station has issued a word of warning against the possibility of great damage being done this year to stored grain by weevils. The weather during the past summer and fall has been very damp, making stored grain liable to be much higher in moisture content than in normal years. This damp condition of the wheat furnishes the proper condition for the various kinds of grain weevil to develop and breed rapidly.

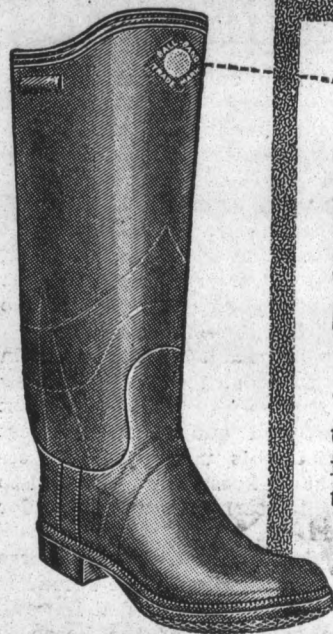
All of the insects in stored grain known as weevil are killed by a treatment of carbon bisulphide, providing the bins are tight and the temperature is at 55 to 70 degrees F. or warmer. Carbon bisulphide is used at the rate of five to eight pounds for each 1,000 cubic feet of space in the grain bin; hence, a bin 12x12x7 feet will require five to eight pounds of carbon bisulphide if it is tight and the temperature around 70 degrees F. Carbon bisulphide forms a heavy gas, 2.8 times the weight of the air. This peculiarity, together with the smothering of insect life through the replacing of most of the air with carbon bisulphide gas, makes it valuable as a stored grain fumigant. The heavy carbon bisulphide gas settles down through the grain, destroying all of the insect life in it in 36 to 48 hours. The gas is inflammable, hence fire of any kind should not be brought near the bins during the fumigation period, or for a few days just afterward. Always make the application in daylight, being careful to breathe as little of the fumes as possible, as the vapor of carbon bisulphide often gives the average person a severe headache if breathed too much.

Washington, D. C. G. E. M.

## PRESERVE THE ASHES.

Just the other day a farmer asked for advice as to what was lacking in a muck soil on which he was unable to grow profitable crops.

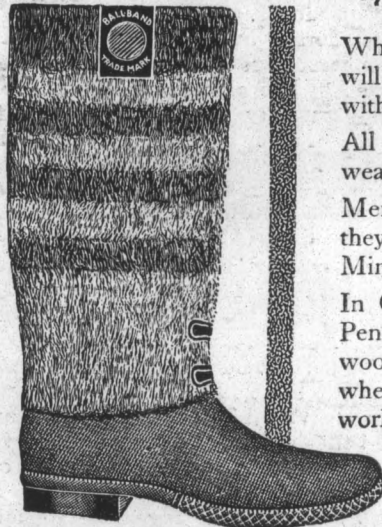
The element of fertility most likely to be lacking on that soil is potash, and the only available source of potash with which to supply that fertility at the present time is wood ashes. The wood ashes contain from seven to nine per cent of potash and about two per cent of phosphoric acid, in addition to 30 per cent or more of lime. With the increased value of potash due to the impossibility of securing same, the conservation of the ashes from wood burned as fuel is more than ordinarily important. They should be kept in a dry place and judiciously used as a top-dressing for the soil where the owner's judgment indicates that the addition of potash will increase crop production to the greatest degree. Investigators have maintained that ashes are well worth from 20 to 25 cents per bushel for their plant food content alone. This being true under normal conditions, they are very much more valuable under present conditions of potash scarcity. Aside from this, their caustic properties are very valuable as a soil amendment in all cases where a soil needs lime.



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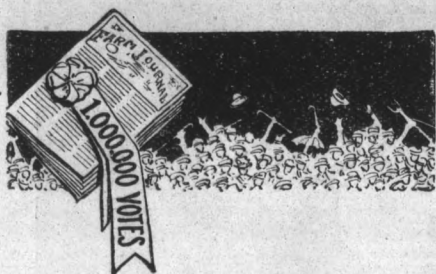
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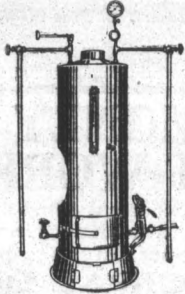
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Splendid proposition and good profits to hustling agents who can produce orders. Write Us at Once.

**GUERNSEY CLAY COMPANY**  
908 Fletcher Trust Bldg., Indianapolis, Indiana.

## Breaking and Training Colts

THE value and usefulness of a horse, says V. G. Stambaugh, of the Bureau of Animal Industry, United States Department of Agriculture, is influenced to a great extent on whether or not it was well broken when a colt. By a broken colt is meant one that is safe to handle in the stable or on the road and that will promptly obey the orders of the driver or rider.

Memory and habit are the two main factors with which to deal in training horses. A horse acts through instinct and habit, and one of its greatest characteristics is uniformity of conduct. What a horse is one trained to do he will nearly always do under like conditions.

The first thing in training a horse is to get his attention. The second is to make him understand what is wanted. The education of the horse is based on reward and punishment. The reward, a pat on the neck etc., should immediately follow the act of obedience. The punishment, to be effective, must immediately follow the act of disobedience.

Few horses are inherently vicious. Many horses are made vicious and unreliable by the carelessness or unnecessary brutality of their trainers. If a horse kicks because the harness hurts him, or shies at something of which he is afraid, punishment is not justifiable. If, however, after being stopped, a horse starts before receiving the command to do so, he should be punished. Horses are naturally obedient, and when thoroughly trained their conduct is uniformly good.

A horse should be trained so that he thinks there is no limit to his power to do the things required of him, and believes that he has no power to do that which is against the wishes of his driver. Above all, never ask of a horse something he is unable to perform and then punish him because it cannot be done. If, during the first year of his work a colt is hitched only to loads that he can pull, he will develop into a good work horse, while if he is overloaded a few times he may become sulky and worthless. But all horses can not be trained alike. A high-strung, sensitive horse must be treated gently, the dullard sharply. The same force applied to the sensitive horse that is necessary to make the dullard act, would be likely to cause the high-strung horse to rebel, while gentleness would obtain obedience.

To train horses successfully a man needs to exercise great patience, gentleness and firmness. If you are training a horse and you lose your temper, you had better put the horse into the stable until the next day, for further work at this time will be worse than useless and may undo the work already done.

Horses may be broken at ages ranging from weanlings to old horses. The instincts in a horse which are opposed to obedience to man increase in strength with age. This accounts for the difficulty encountered in handling range horses that are allowed their freedom until their instinct of independence is so strongly developed that it is proportionately difficult to teach them that it is their duty to obey some force other than their own instinct.

The best plan is to begin the education of the colt as early as possible. The method generally followed is to break the colt to being led and handled before it is weaned, and to break to harness between the ages of two and three years. Colts should not do heavy work until they are four years old, and should be accustomed to it gradually.

Before a colt is broken to being led it should be taught to stand tied; this applies to unbroken horses of all ages. To do this, put a strong halter on the

colt; then take a rope about 14 feet long, double it, putting the loop under the horse's tail as a crupper, twist the two ropes together about three times, then let one rope come forward on each side of the horse, and tie the ends together in front against the chest just tight enough so that it will not drop down; then run a surcingle loosely around the horse behind the withers, tying into it the crupper rope at both sides. Have an additional rope about 12 feet long, run it through the halter ring, and tie it at breast to the rope that forms the crupper. Tie the other end of the rope to a solid post, allowed about three feet of slack. Leave the colt tied for an hour.

While emphasis is laid on the importance of using kindness to a horse, in reality the whip is of equal importance with kindness. To be submissive to a man's will, the horse must fear the consequence of disobedience. There will be clashes, but the horse must be convinced that man is his master. Always, if the horse can not do or be made to do what is asked of him, make him do something else. As long as he is not allowed to do what he himself chooses he will consider man his superior and master.

### FEEDERS' PROBLEMS.

#### Molasses as a Stock Feed.

As there are quite a few farmers around here that are feeding molasses that costs about 18 or 20c a gallon, I would like to ask you if it is worth the money and how much should I feed to a horse weighing about 1,000 pounds; to a hog that weighs about 125 pounds; to milch cows and to small calves?

Genesee Co.

C. G.

At the price named the nutrients in molasses will be somewhat higher than their value in the ordinary grain feeds. Molasses, however, has a condimental value which should be taken into consideration in this connection. It is relished by all kinds of live stock when fed in connection with other feeds, and the increased palatability of the ration will increase consumption and stimulate digestion and assimilation of all the feeds contained in the ration.

For horses molasses has a peculiar value, being often prescribed by veterinarians for cases of chronic cough or other disorders of the respiratory organs. The amount fed should depend upon the other feeds being used and the relative costs of nutrients contained in same. Horses have been fed as high as fifteen pounds of molasses per day where this was a cheap factor in the ration, but under ordinary conditions, from two to three pounds per day should be considered the maximum amount of this feed which can be profitably used, and in most cases a smaller allowance will prove more economical.

The usual method of feeding to the horses and cattle is to dilute with water and sprinkle over the forage; used in this way a poor quality of forage is made more palatable and will be consumed more closely and profitably. For hogs even a small quantity of molasses mixed in the slop will increase the palatability of the feed to a marked degree.

Aside from its use as an appetizer and condiment, the amount of molasses used in the ration should depend upon its relative cost as compared with other feeds, it having a food value approximating that of corn, as indicated by chemical analysis.

Hogs marketed in Chicago are averaging only 192 lbs. in weight, comparing with 227 lbs. one month ago, 224 lbs. two months ago and 221 lbs. two years ago, light hogs and mere pigs comprising a big share of the daily offerings. With materially increased receipts since the period not long ago when prime barrows sold for around \$9 per 100 lbs., the market has experienced big breaks.

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You get 100 gallons of rich milk feed from 100 pounds of Blatchford's Calf Meal, and it costs you only one-fourth as much. It will make your calf grow fast and well. Blatchford's Calf Meal is composed of the elements the young calf needs in the most trying period of its life. It is thoroughly steam cooked—prevents bowel troubles and other ills due to improper milk substitutes.

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does the work with less power because of the Double Grinding Rings. Grinds mixed feed, corn on cob or in shucks, sheep oats, Kafir corn, clover, hay, grains and Cotton Seed. Will grind coarse or fine. Easily operated. Force feed never chokes. For gasoline or steam engine. 9 sizes, 2 to 25 H. P. Fully guaranteed. Catalog FREE. Write today.

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## A Problem In Bovine Tuberculosis

In my neighborhood we have a peculiar condition which I think needs attention. My three nearest neighbors and myself have our farm buildings arranged so that they are quite close together. We are all in the dairy business and take great pains to keep things in shape, but I have watched some symptoms and feel convinced that one of the herds, and probably all four, are affected by tuberculosis. I believe some of the cows in advanced stages of the disease.

Two years ago they were all slick, beautiful cows and now it is a sad sight. I see them slowly die, while I watch them from week to week. My neighbors are, of course, inclined to think that I am mistaken. I wish they were right, but I fear that I am right. Three of us have lost one or more cows during this year, and with Dr. Fair's book in hand, I feel convinced that they suffered from the said dread disease. My cows are fine grade Jerseys and I think they all caught the disease from germs left in a dark, damp stable of my neighbor, where some years ago, before he had the place, six or eight cows died one winter of tuberculosis. The stable is all right now, but the germs, I think, were left. I think this is the origin of our present trouble.

My 12 cows, two years ago, looked fine, generally fat in winter, clean enough to hug and kiss and, of course, gave a fine lot of milk. I fed hay, silage, corn fodder, yellow mangels, ground oats and corn, and bought oil meal. I felt proud of them. I loved them as my children. I enjoyed to be in the stable all the time. I had about 20 head of young stock, great and small, and they were nearly as good. But now I feel like crying whenever I see my herd of cattle, in particular my cows; the young stock are two miles away in a new 80, and are a little better off.

My cows now are slow, listless, thin,

eat only what is most tasty, such as ground feed, and gradually grow thinner. I have nice corn fodder, full of little soft ears. This they will eat, also some ground feed with oil meal and thus they still give a reasonable amount of milk. But they do not eat nor produce like formerly. Three of them have a bad cough and six little calves of three and four weeks old all cough. A very beautiful big cow became thin last winter, and during the summer gradually pined away and died a few weeks ago. The prospect is that in about a month or so another one will go the same way. On a fine young heifer cow there grew a big bunch in the hollow below the vagina and above the udder. Recently I noticed it was getting ripe. I cut it open and a half cup of yellow, grayish stuff rolled out.

On my neighbors' places the symptoms are about the same. In one place the cows are extremely poor and at times so stiff that they can't walk, and lie down in the barnyard all day.

Now, I wish you would give me a few pointers, if you can, on the following:

Is there a state law about this contagious disease? If there is, what is my duty according to said law? If I start killing off, must I make a clean sweep of the whole herd, or is it sufficient to kill only the individuals that show the test reaction? If I kill off my herd, or the required individuals, can I expect a reimbursement for my loss by the state, the same as with foot-and-mouth disease? How must I prepare my stables for a new herd? How long should I wait before I can safely start a new herd? Have I any right to force my neighbors also to subject their herds to a test examination? May cattle that are in good condition, but show test reaction, be sold for slaughter? If not, may the hides be taken off and sold?

SUBSCRIBER.

It is not safe to condemn animals for tuberculosis simply from their looks. The unhealthy appearance might be caused from some other disease. The symptoms given would certainly make one suspicious, and in my judgment the matter should be taken up with the State Live Stock Sanitary Commission at once. The longer the matter is delayed, the more firmly seated the disease becomes. It is likely the young cattle are not affected. But this cannot be known short of applying the tuberculin test.

If the matter is brought to the attention of the state commission, they will test the cattle or will authorize some competent person to do so. With the present law it is voluntary with the owner whether his cattle are tested or not. It provides a way for the farmer to keep his herd free from tuberculosis and the state will compensate him in part. The state, I think, does its share. Health boards may pass ruling that milk cannot be offered for sale in the cities unless cows are tested, but they cannot compel the farmer to have his cows tested; they can prevent him from selling the milk to the public.

The farmer, however, ought to be personally interested in this matter, just as this enquirer is. Many of them are not. If their cattle have tuberculosis, sooner or later it will ruin the herd if neglected, and in this case the farmer must stand all the loss. By taking advantage of this law and working with the state commission, they stop the ravage of the disease and the state stands part of the expense. A farmer should have his cattle tested every year. If the disease is present, dispose of all those that react each time. It will be only a short time before all infected animals are eradicated from the herd. Then keep the herd free from the disease by being very careful about purchasing other cattle, by keeping the cattle in well lighted and well ventilated stables, and to make sure, test them once a year.

The law allows the state to pay the owner of those animals reacting \$50 each for pure-bred registered animals, and \$25 for all affected grades. Besides this the owner has the meat val-

ue of the carcass and the hide. The animals must be slaughtered under the supervision of the commission, and the carcasses inspected. If fit for food they are sold at the market price and the owner gets the money. If condemned they are worth only their value as tannage. I am informed that about 90 per cent of slaughtered animals are passed by the inspectors and sold for food.

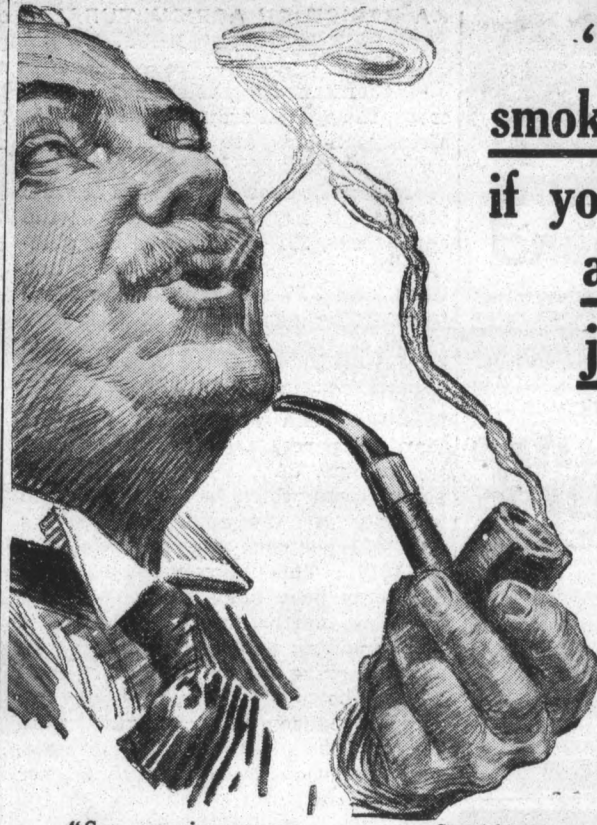
After the reactors are disposed of, the stable must be thoroughly cleaned and disinfected before other cattle are allowed to enter. This is best done by thoroughly whitewashing, using a good disinfectant in the whitewash. Use say one gallon of disinfectant to each barrel of whitewash. The whitewash is best applied with a spray pump. Sweep down all dust and cobwebs and then thoroughly spray. This, however, is not asking too much of the farmer, in fact, his stables should be whitewashed every year, whether he has diseased animals or not. This practice will go a good way toward preventing disease in his herd.

You cannot force your neighbors to test their cattle, you can only coax them, but there is little or no danger of their cattle communicating the disease to your cattle unless they are kept together in the same barn. No one now even fears pasture infection, but I would not allow infected cattle in the same pasture ever, and certainly not in the same barn with those free from disease.

If you will get in touch with the Live Stock Sanitary Commission they will authorize someone to test your cattle, and will give you information as to disinfecting the stables and keeping your herd free from this terrible disease in the future.

### CATALOG NOTICE.

"Feed Cooker Facts," is the title of a circular sent upon request by the Lewis Mfg. Co., Cortland, New York. It contains quotations from agricultural experts the country over showing the advantages of cooked feed for hogs, and the benefits which will be derived from feeding same. Literature describing "The Farmer's Favorite line of Feed Cookers," manufactured by this company, will also be sent.



"Say, you ring-one up with some P. A., too!"

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225 POUNDS CAST IRON SELF-SINKING

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SAVE IT this winter by heating the water for your stock with Coal, Wood or Cobs in a **COW BOY TANK HEATER**

Quickest to heat; strongest draft; adjustable grates; ashes removed without disturbing fire; keeps fire 24 hrs. Absolutely Safe; pays for itself in 2 months with 4 cows; Self-Sinking; can be used in Wood, Steel or Concrete Tanks of any size. Most reliable, practical, efficient and durable Tank Heater manufactured.

"Purchased 3 of your Tank Heaters last Winter, worked very satisfactorily and are well worth their cost. Every Stockman should use one." (Signed) W. H. PEW, Professor of Animal Husbandry, Iowa State College, Ames, Iowa.

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Made of Krupp steel—weighs only 171 lbs.—two speeds—endorsed by U.S. Government experts. Works on hillsides and marshes where horses cannot operate. One man and a K can clear single-handed from 50 to 100 stumps per day.

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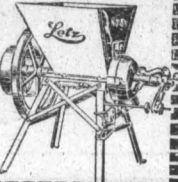
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RUNS EASY—No Backache—Weights only 41 lbs.—Saws Down Trees Easily—Cutting

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## A REGION OF AGRICULTURAL PROGRESSIVENESS.

(Continued from first page).

crops, the special crops for which it is already noted are the fruit crops. Again percentages derived from the census speak exceedingly well for this section. It has 50.8 per cent of the apple trees, 25.8 per cent of the cherry trees, 44.6 per cent of the peach trees, and 37.7 per cent of the plum trees. The percentage of the total yields of these fruits show that this section is especially adapted to fruit growing, for in every case except apples the yield percentage is higher than the percentage of trees planted. On account of the large number of young trees which have not come to maturity yet the apple yield shows only 25.1 per cent of the state's total in 1910. This percentage has undoubtedly been much increased since then as northwestern Michigan is yearly adding to its reputation as an apple growing section. The other fruit yields, however, indicate that her trees produce better results than those in the other parts of the state, for her peach trees produce 56 per cent of the total peach crop of the state and her plum trees and cherry trees produce 49 per cent and 46.3 per cent respectively of the total state crops of these fruits.

Here again, northwestern Michigan shows that it is the section which has done much to make the state famous, for Michigan stands third among the states of the union for the total production of orchard fruit, second in apples, fourth in peaches, fourth in cherries and eighth in plums. The figures above show without a doubt that the claims that northwestern Michigan will be the fruit-garden of the middle west will be fulfilled, for there is no section of the country close to the greatest fruit consuming market which has so many natural conditions favorable to the production of fruit as western Michigan.

It avails a community little if it is productive, but has no economical means of getting its products to the consumer, for the matter of distribution is fully as important as that of production. Northwestern Michigan is especially fortunate in this respect. It lies on the greatest inland waterway of the world and has along its shore 17 of the 34 well established ports of the state. At these places economical and convenient transportation can be had for its products to either the great eastern or western markets. The ports across the lake open to this section the markets of the grain states, the best fruit markets of the country. These ports include Chicago, the greatest food distributing center of America.

### Transportation Facilities Good.

Northwestern Michigan is also very fortunate with reference to railway transportation, for with its 10 per cent of improved land it contains 20 per cent of the railway trackage of the state. The railroads, besides connecting the interior with the numerous lake ports, run in competition to the water routes to the large markets. This competition is of special advantage, for to compete with water transportation, the railroads have maintained very low rates. As a result western Michigan enjoys some of the cheapest freight and passenger rates in the country.

Good roads also abound here for the people have been very active along this line. The good roads propaganda work is as well organized here as in any part of the state. Much of the pioneer good road work has been done here, and many object lessons for the older settled parts of the country are found in this section.

In considering the purchase of a farm in a new section the social conditions should be given serious thought, for farming is a life as well as a means of livelihood, and it is due the

coming generation that it have fairly good social surroundings. In this respect the newcomer will be pleased here, for the people are wide awake to the good things in rural life. The schools are good and plentiful, and farmers' social organizations abound. This section contains 31.3 per cent of the granges of a state which is one of the best grange states in the union. That these granges are alive and well organized is indicated by the fact that they have 34.2 per cent of the membership, which is more than their share. Community welfare and co-operation have good holds on the people, and in a commercial way the spirit of co-operation is manifested by at least six large farmers' shipping and buying associations.

### The Price of the Land is Low.

The desire to get our money's worth is a common human trait. We are willing to pay what a thing is worth, but we are especially pleased if we can get a thing for below normal prices. This trading instinct will never die and therefore the price is always a thing which attracts our attention. From the recital of the advantages of this section one would expect to pay at least the average state price per acre for land here. The 1910 census figures show, however, that land prices in this section are 31 per cent less than the average for the state. For what this section has to its credit this is remarkably low.

Newcomers are becoming aware of possibilities of this section of the state as the land is fast being settled. During the first six months of this year records show that 1352 families have settled there, these families having taken up approximately 50,000 acres of land.

While many of the advantages of this section have been given herein, it is not the desire of the writer to convey the idea that this is a land of milk and honey. Ability to judge land is as necessary here as elsewhere, but this, coupled with a desire to give the land a fair show, will give to the newcomer results which will be hard to duplicate in other more settled sections of the country. It is neither fair to the man or to the community in which he settled to be taken in on land purchases, but everywhere there are a few who are willing to misguide a newcomer. Those who have the welfare of this section of the state at heart, desire that those who have become interested in it for prospective homes should beware of such people.

Those who have made hasty trips through northwestern Michigan may dispute some of the statements made herein as casual observations from the car window are likely to be disappointing. A close observation of the state soil map will reveal that the railroads invariably follow along the strips of poor land. These roads were originally put in for the purposes of hauling lumber and they went through the sections where most of the cutting was done, and this was mainly on these lighter lands. Therefore we find that the roads follow along poor strips of land, sometimes less than a mile in width. However, the trains over these roads, instead of carrying lumber are now laden with potatoes, fruit and other farm products of this section. But it is due to this catering to the early lumber trade that observations gained through railway travel in northwestern Michigan do not do the country justice.

### ATTEND MEETING OF STATE HORTICULTURAL SOCIETY.

The Forty-fifth Annual Meeting of the Michigan State Horticultural Society will be held at Grand Rapids, in the Coliseum, on December 7-8-9. A large exhibition hall has been secured in the same building where there will be an extensive display of spray machinery, spray materials and other horticultural accessories.



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**FORMALDEHYDE**  
The Farmer's Friend.

This powerful disinfectant destroys grain smuts and fungus growths. It prevents flax wilt, also scab and black-leg on potatoes. Rids stables and chicken houses of disease germs and flies. No up-to-date farmer should be without a supply of Formaldehyde—the best bears the Perth Amboy Chemical Works label—35 cents in pound bottles at your dealer with complete directions. Big illustrated hand-book sent free on request.

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**6000** Silos in 1916.  
In Profit-Sharing Contract on Early in Year Purchase.

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Glazed Tile and Lumber shipped direct from kiln and factory on low cost basis early in year. Let us tell you about our new 1916 profit sharing sales plan so you can buy right and erect silos when farm labor is plenty and cheap. Our "Earn Cost First Then Pay" plan interests both Salesman and Buyer. Ask for 1916 proposition and Silo booklet.

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Dept. 621 KALAMAZOO, MICH.

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Everybody claims to pay highest prices. We give reasons.  
1. Four European branches. Numerous European connections dealing with us directly and paying highest prices because they believe in our quality and business methods. Exceptionally heavy demand in Europe this year, and low supply, due to the war.  
2. We pay practically according to your grading, and hold your furs in cold storage until you say amount is O. K.  
Send us a trial shipment. See how much more you can earn by dealing with us. We will mail you, free, our new book, "Successful Trapping," if you will send for it. Also our price list. Don't make a single move until you see it. Write today.  
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Will pay 5 per cent above my quoted prices on shipments of \$5 or over. I charge no commission, pay express and parcel post charges and remit same day I receive the goods. Send a postal for Price List.  
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References: Bradstreet's, German Exchange Bank, Dunn's.

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I need large quantities of all kinds of raw furs, and it will pay you to get my price list. I especially solicit communication with dealers having large lots to sell. Write for price list and shipping tags today to  
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Big demand for American Furs! We pay top market prices and keep furs separate upon request, keep you posted at all times, and send market reports and price lists—FREE! Write TODAY.

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**TRAPPERS**

We want your furs—we pay highest prices—WE CHARGE NO COMMISSION. Send today for FREE price list and particulars of our FREE GIFT to trappers.  
**HILL BROS. FUR CO. 362 N. MAIN ST. ST. LOUIS, MO.**



# Magazine Section

LITERATURE  
POETRY  
HISTORY and  
INFORMATION

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

The FARM BOY  
and GIRL  
SCIENTIFIC and  
MECHANICAL

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

**S**HORTLY before his death, Dr. Charles E. Bessey, who was at that time serving his thirtieth year with the University of Nebraska as chancellor pro tem and head of the Department of Botany, gave me the history of the famous split rock which stands at the eastern limits of the city of Lansing, Mich. Dr. Bessey graduated at the State Agricultural College at East Lansing in 1869, and served as professor of horticulture and botany in the Iowa Agricultural College before going to Nebraska. This prominent scientist always took a great in-

## The Famous Split Rock

By DON FRANCISCO.

terest in the now famous boulder on the East Lansing road.

He gave the following account of its development:

In the latter part of June, 1866, I reached Lansing in order to enter the college. As I remember it, I stopped over night at a small hotel, and next morning walked up to the college. On my way I saw at the left hand side of

the road a large boulder, to which my attention was attracted by the fact that a little tree a foot and a half or two feet high and about a third of an inch in diameter of stem, was growing from a crack in the top of the rock. This crack was not more than half an inch wide, and did not extend through the boulder.

I had heard of such things before,

and immediately wondered whether this little tree would be strong enough to finally split the boulder in two; so I climbed to the top of the stone, and made a careful examination of the crack and the little tree, finding that it was a wild cherry tree. Much later, after I had studied botany, I learned that the scientific name of this is *Prunus serotina*, but at that time, of course, I knew nothing more than the common name. I proceeded on my way to the college, remembering, however, that I had seen a thing to be remembered and watched.

## WORLD EVENTS IN PICTURES



D'Amour in U. S. for Machinery to Reconstruct French Industries.



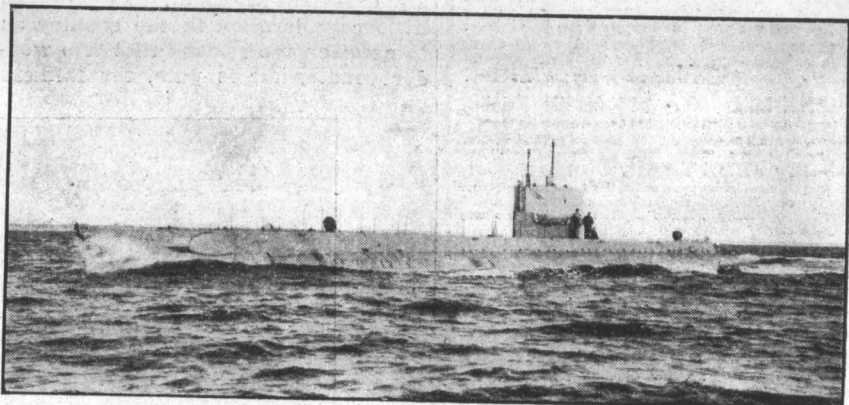
Brooklyn Candy Factory where Fifty Lives were Lost During a Fire.



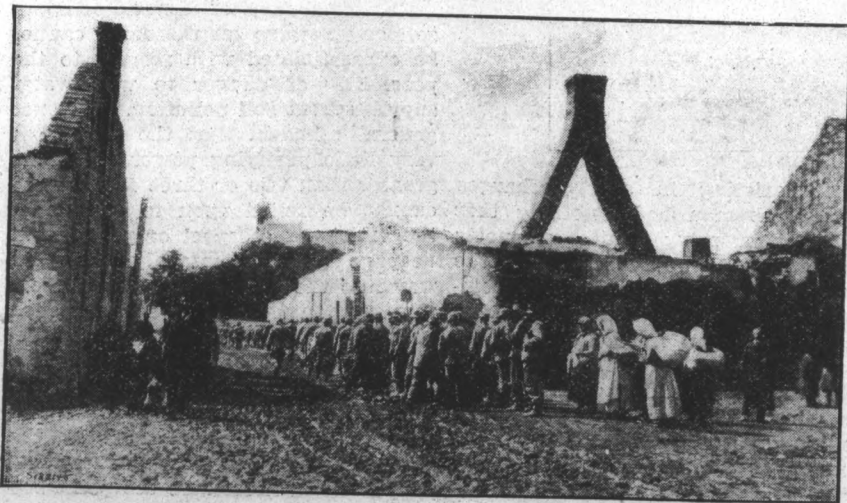
War Materials Plant in Trenton, N. J., Destroyed by Fire with a Loss of One Million Dollars.



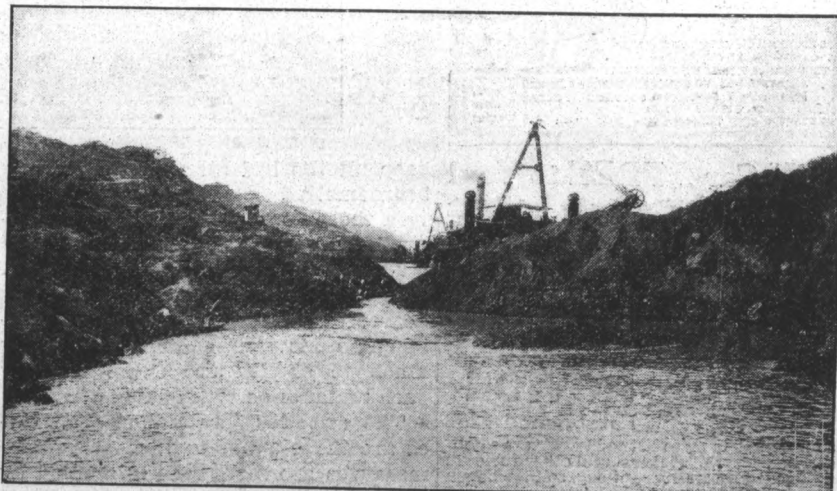
French Soldiers Making a Charge from a Trench Dug in Front of the Battle Line.



Uncle Sam's Biggest Submarine Can Cruise 6,000 Miles from its Base of Supplies.



Austrian Sanitation Corps Cleaning up Jazebow Preparatory to the Return of the Inhabitants.



How the Latest Landslide Choked the Panama Canal and the problem it Presents to the Canal Officials.



## Wonderful New Kerosene Light

Burns Vapor  
Saves Oil

Beats Electric  
or Gasoline



Awarded  
**GOLD MEDAL**  
at World  
Exposition  
San  
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Scientists  
say its  
**White Light**  
is nearest  
to day-  
light in  
color

### 10-Days FREE TRIAL

#### Send No Money, We Prepay Charges

We don't ask you to pay us a cent until you have used this wonderful modern light in your own home ten days—we even prepay transportation charges. You may return it at our expense if not perfectly satisfied after putting it to every possible test for 10 nights. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests at 33 leading Universities and Government Bureau of Standards show that it

#### Burns 50 Hours on 1 Gallon

common coal oil, (kerosene) and gives more than twice as much light as the best round wick open flame lamps. No odor, smoke or noise, simple, clean, no pressure, won't explode. Children run it. Several million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed.

#### \$1000.00 Will Be Given

to the person who shows us an oil lamp equal to the new Aladdin (details of offer given in our circular.) Would we dare make such a challenge if there were the slightest doubt as to the merits of the Aladdin?

**Men Make \$50 to \$300.00 per Month With Rigs or Autos Delivering the ALADDIN on our easy plan.** No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 34 lamps out of 31 calls." Thousands who are coming money endorse the ALADDIN just as strongly.

#### No Money Required

We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory. Sample Lamp sent for 10 days FREE Trial.

We want one user in each locality to whom we can refer customers. Be the first and get our special introductory offer, under which you get your own lamp free for showing it to a few neighbors and sending in their orders. Write quick for our 10-Day Absolutely Free Trial. Send coupon to nearest office.

**MANTLE LAMP CO., 154 Aladdin Building**  
Largest Kerosene (Coal Oil) Mantle Lamp House in the World  
Chicago, New York City, Portland, Ore., Montreal or Winnipeg, Can.

#### 10-Day FREE TRIAL Coupon

I would like to know more about the Aladdin and your Easy Delivery Plan, under which inexperienced men with rigs make big money without capital. This in no way obligates me.

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Address ..... State .....

## Start Your FORD From the Seat

Start your Ford from the seat every time, in the coldest weather, when others fail with a **SANDBO** Two-Compression Starter. Differs from all other cranks complete revolution—over two compressions, past two ignition points. Guaranteed to start no matter how cold. Improved positive release in case of backfire. Price, \$14.00. Write **SANDBO STARTER CO., 78 Sandbo Bldg., Rock Island, Ill.**



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Dealers  
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Yes, it's a fact. You can get this superb 30 h.p. 5-passenger BIRCH Motor Car with electric lights and starter, absolutely Free, and the agency for your territory, if your name reaches me soon enough. Make \$3,000 to \$10,000 a year in the automobile business. I will show you how. Get full information at once. Write quick—before too late. Address Ralph Birchard, Pres., BIRCH MOTOR COLLEGE, Inc., Dept. 1138 Tower Bldg., Chicago.

## NOTICE

Established 1886  
Write for complete price list today. We are catching Herring, Perch, Pickerel and other varieties daily. Packed in strong sanitary solid wooden packages. Smoked, canned. Imported and Domestic salt fish. Newly frozen Ocean fish a specialty. Get in touch with us before ordering elsewhere.  
**JOHNSON FISH COMPANY,**  
Lock Box 44, GREEN BAY, WISCONSIN.

During my three years and a half in the college I watched this little tree and the boulder. I spoke of it to a good many of my friends among the students but at first could get but little response. Nobody seemed to think that it was an extraordinary thing that a little tree should be growing from a crack in a rock, and they did not care to look into the future to see what might happen, preferring to wait for developments.

All this time the little tree grew, and when I saw it in the latter part of January, 1870, the tree was much larger, and the crack had opened a good deal wider since I first saw it.

Returning for a short visit early in 1873, I noticed as we drove by the boulder, that the crack was greatly increased in width. Then I did not see it for a dozen years or more, and I was very much delighted when, in 1885, I found that the crack had been extended entirely through the big boulder, and that the two parts of the rock were now separated to the distance of quite a number of inches. The little sapling had become a fair-sized tree. Then another decade interval passed by, and finally at the time of the semi-centennial celebration at the college in 1907 I walked out again from the city to the college and examined the boulder with its tree growing through the great crack, for what was originally so small a crevice that I could scarcely push my fingers into it had now become a great yawning space, and the tree had reached a diameter of over a foot. You can imagine how pleased I was to find that my prophecy made more than forty years before had been realized, and that the tiny tree had split the great rock.

I have seen this rock and tree a good many times since this last date, and especially in 1911 and 1912 observed them with increasing interest.

I always look for the split rock as I go by it on the trolley car, for it reminds me of my first trip over the rugged road on foot.

It has always seemed to me that this example of what plant growth can accomplish was placed here half way between the city of Lansing and the college especially in order that the hundreds and hundreds of students going by might have a great object lesson in botany. I trust that no vandal hands will be allowed to disturb the boulder or the tree and that both will be protected by the students and people of the community for it is too fine a monument to be defaced or spoiled.

Further information relative to the exact origin of the tree was supplied by Joseph A. Jeffrey, former Professor of Soils at M. A. C., who said:

Nine years ago I had an interesting conversation with Mr. Thomas Foster, who then owned and lived in a brick house which still stands near the rock. In this conversation he stated that fifty-one years before, as a young man recently come to Michigan, he was working in the vicinity of the rock, and sat down by the rock one day, with a companion, to eat his dinner. During the rest period of the noon hour the companion pulled up a very small cherry seedling which was growing near the rock, and placed it in the mold occupying the upper portion of the crack on the rock.

The seedling succeeded in establishing itself and later developed into the cherry tree which has since become so famous. According to Mr. Foster's reckoning, the tree has now occupied its place in the rock for sixty years. Its early growth was probably slow, owing to the position it occupied, and this probably accounts for the size of the tree at the time Dr. Bessey first observed it.

## Rural Sanitation

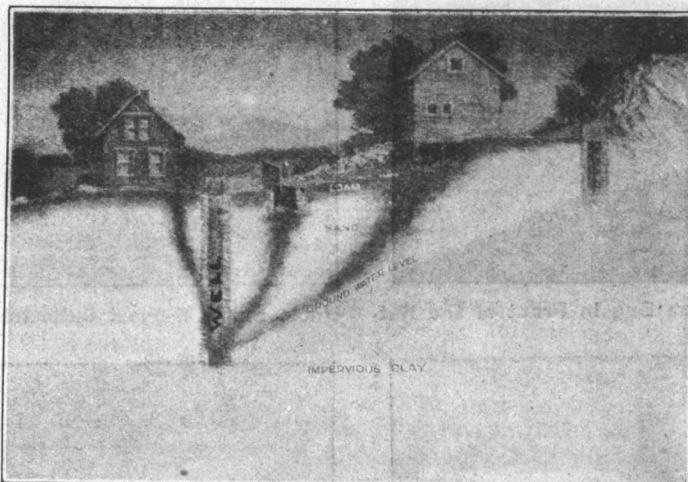
By EDWARD D. RICH, C. E.,  
State Sanitary Engineer.

IT is a common supposition that the country is a more healthy place in which to live than the city. This idea doubtless has its roots in the fact that country air is less polluted by smoke, dust and the gaseous products of commercial industries.

But there was a time when the importance of a liberal supply of fresh air, especially at night, was given so little consideration in the country as to occasion the remark that "No wonder country air is pure, the farmers

order to produce an infection, the specific germs of the disease must find their way from the bowel and kidney discharges of the invalid into the digestive tract of a well person by way of his mouth. This generally occurs through the medium of food or drink, particularly water; hence the name "water-borne."

When we reflect upon this we are at once impressed with the importance of using great care in protecting food and drink supplies from contam-



keep all the bad air shut up in their bedrooms!"

In these days of publicity, the wide-awake farmer is giving intelligent study to the problems of sanitation and demanding a very much higher degree of safety, comfort and convenience in his surroundings and doing much to abolish the cause for any such remarks as that quoted above.

The so-called "water-borne" diseases are those against which preventive measures are most readily applied by the sanitary engineer. It must be clearly borne in mind, with respect to the water-borne diseases, that in

ination existing in any discharges from the human body, notably that contained in privy vaults, cesspools and sewers. It would seem that the chief danger to health in rural communities lies in the neglect of taking proper precaution in the disposal of sewage and night soil. The open privy with its attendant evils, is still common in the country districts of Michigan and altogether too prevalent in many of our cities where sewage facilities are available.

If one cannot afford expensive toilet conveniences a privy which is safe, decent, respectable and sanitary may

be had in place of the one so commonly used and to which none of the above adjectives could, by any stretch of imagination, be applied.

Three requirements should be complied with if the privy is to be first class:

1. The receptacle must be water-tight and easily cleaned.
2. The building must be fly-tight and well ventilated.
3. Care and attention must be given to regular cleaning and it must not be allowed to get out of repair.

Water-tightness means either a concrete vault or a removable receptacle placed above the surface of the ground. The latter is preferable on account of the ease of cleaning and, if plenty of dry earth is used, need not require frequent renewals.

Fly-tightness demands screens in the windows, self-closing lids and doors and all the parts fitted together in a workmanlike manner and maintained in that condition. Ventilation may be obtained through screened windows or through a pipe or box flue extending through the roof.

Regular cleaning should be made once each week in summer and about once in three weeks during winter.

If the above precautions are observed the soil can be protected from pollution and the depredations of flies, which play such an important part in carrying disease germs to the kitchen, very largely prevented.

In case the householder desires more convenient and comfortable toilet facilities and is willing to invest more money in the outfit, very satisfactory results may be obtained by the use of one of the various forms of chemical closets for sale by several manufacturers. If an efficient chemical is used complete sterilization of the accumulation may be expected and offensive odors prevented. The chemical closet may be placed in any convenient room in the house and thus do away with being subjected to inclement weather and it then furnishes all the conveniences of ordinary plumbing at much less expense. It also offers an opportunity for a vast improvement in the sanitary surroundings of country schools by eliminating the worst form of privy known and protects the health and morals of the pupils. This system has the approval of the state board of health if proper and efficient chemicals are always used. A bulletin known as "Engineering Bulletin No. 5" has been issued, describing the process and enumerating the precaution to be observed. Copies can be had upon application to the secretary of the board at Lansing.

It is now feasible to install modern plumbing in farm homes where a supply of running water is available and the sewage disposed of in a sanitary manner. "Engineering Bulletin No. 2" describes this method in detail and gives a plan of such an installation suitable for a single family. Copies of this pamphlet may also be obtained upon request.

The importance of disposal of night-soil and sewage on the farm cannot be overestimated with respect to the possibility of danger to well water supplies from soil pollution. It is not generally known that the earth has very little purifying power at depths greater than two or three feet and so cannot be relied upon to counteract the effects of cesspool or privy vault seepage which commonly finds its way into the ground at depth of from three to ten feet. Just how far such pollution will travel under ground depends upon the earth formation in a given locality, but is often several hundred feet. The cut shown herewith is from a model used by the state board of health for educational purposes and illustrates the point better than words can do. This picture is commended to the thoughtful attention of every rural resident.



# Land O' Nod Stories.

By HOWARD T. KNAPP.

THIS is Billy Be By Bo Bum and I am Tinker Teedle Tee," said the merry little elf to the captain of the ant soldiers who had stopped them at the gate of the underground city. "We have come to pay a visit to the Queen, so open the gate and show us the way to the palace."

"Do ants have a Queen?"

"They surely do, and a most wonderful person she is, too, as you will find out when you meet her."

The soldiers bowed politely to Tinker and Billy and, as they couldn't tip their hats, for, of course, ants don't wear hats, they waved the long, hair-like feelers or antennae that grew out from their heads, which was their way of saying, "We are very glad to see you Billy Be By Bo Bum, and you too, Tinker Teedle Tee." Then they led the way to the gate of the underground city, which proved to be a very deep and dark tunnel.

"These fellows are sentinels," whispered Tinker as they entered the tunnel with two soldiers showing them the way. "All day long they guard the entrance to the city to see that no enemy of the Little People sneaks inside."

"Do ants have enemies?" asked Billy in surprise. "At least, enemies small enough to get inside an ant hill."

"I should say they do," Tinker replied. "Didn't you ever seen an Ant Lion?"

"I once saw a lion at the circus but I never knew they ate ants, and besides he was too big to get in here."

"Oh, I don't mean a circus lion," laughed Tinker. "An Ant Lion isn't like him at all, at all. The fellow I

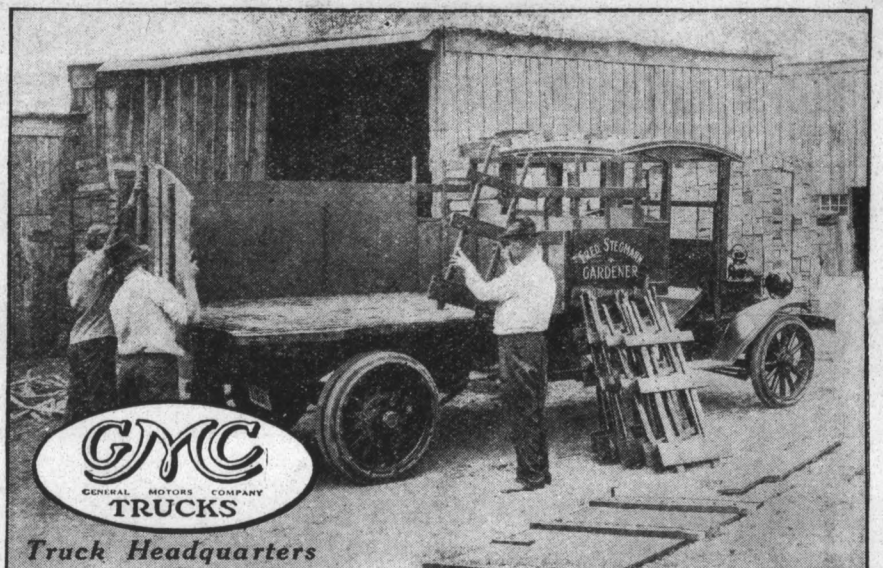
am speaking of is a big, savage insect that goes around catching and eating ants. Now, if he got into the city he would find his way to the nursery and kill and eat hundreds of baby ants and eggs that had not hatched out yet. So it is the duty of the sentinels to keep a sharp watch for him, and if he tries to force an entrance to the city, the guards at the gate pitch into him and drive him away or kill him."

"But the ants' worst enemies are the inhabitants of other ant cities, for the ants are a war-like people and they fight many a bloody battle with the armies of their enemies, bitter, merciless wars that never end until one or the other army is completely wiped out."

"Why, I always imagined ants were quiet, peaceable little fellows."

"They are quiet and peaceable in their own city all right," replied Tinker. "But just let a strange ant set foot in the dooryard surrounding their city, and the sentinels will rush down the hill and kill those intruders almost before you can say Jack Robinson. More than likely those few stragglers are the advance of an invading army, so the sentinels at once spread the alarm, and in a few minutes the plain will swarm with thousands of soldier ants ready to meet the enemy and drive them away or die in the attempt."

"Then when it rains the sentinels drag little balls of earth or clay to the entrance and stop up the gate so the water won't flood the city. Oh, the sentinels have plenty to keep them busy, I assure you, but we must hurry, or the Queen will have gone to bed before we arrive at the palace."



Truck Headquarters

## The haul that pays

Whether you have milk, garden truck, fruit or grain to haul from your farm to market the cheapest and fastest way is to use a good motor truck. This will save your horses and save your time—a sure way to earn more money clear.

GMC Trucks are making good on farms all over the country. We make both light and heavy machines in the largest exclusive truck factory in the world. We can give you any information you may want regarding trucks for your work.

Our special farm truck carries loads up to 1500 lbs. and on Sundays and holidays can be fitted with comfortable seats for eight passengers. Ask for our free booklet 10.

**GENERAL MOTORS TRUCK CO**

Pontiac, Michigan

(47)

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A Square Deal, Liberal Assortment, Top Prices. Write for price list.  
GEO. I. FOX, 279B Seventh Ave., N.Y.

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## What Do You Expect Most in the Rubber Boots and Shoes You Buy?

*Wear*, above everything else. But wouldn't you like a pair of boots or shoes that were soft inside and comfortable, yet had all the wearing qualities you'd expect? Then ask your dealer to show you his stock of

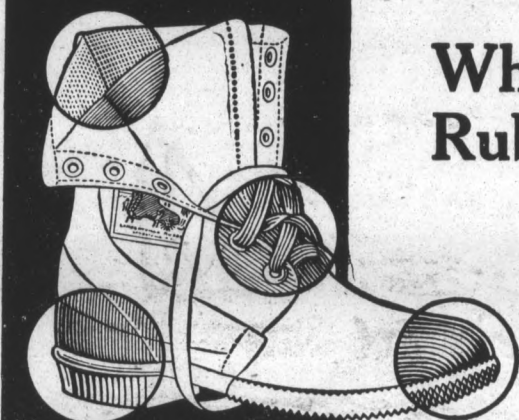
## LAMBERTVILLE RUBBER FOOTWEAR

You simply can't buy better rubber footwear than Lambertville. We can't show the *quality*, we can't show the *comfort*, but you can examine any of the Lambertville Line and you'll see for yourself how much real quality there is in these boots. Your merchant pays *more* for Lambertville Rubber Footwear, simply because he is anxious to sell goods that really satisfy you.

All "Snag-Proof" boots and shoes are made of seven thicknesses of pure rubber ground right into heavy sail duck. The "Lamco" brand is made of purest Para rubber with seven stout ribs that add strength and sturdiness. For long wear and durability, buy Lambertville Rubber Footwear.

Most good dealers sell Lambertville Rubber Footwear. If your merchant should not sell this famous line, write us and we'll quickly see that you are supplied at regular prices.

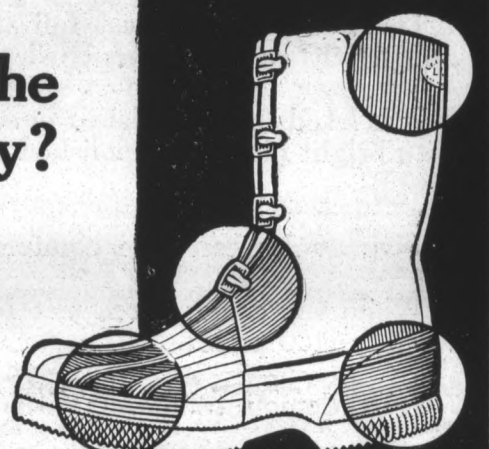
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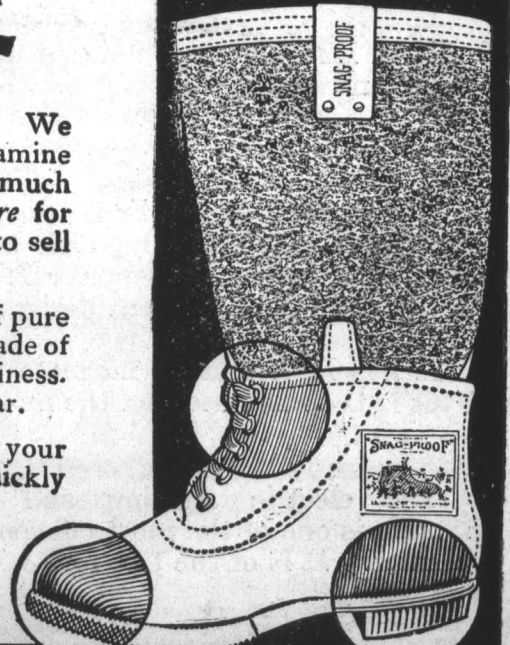
"SNAG-PROOF" HUNTING & SPORTING BOOT



"SNAG-PROOF" SHORT BOOT



"LAMCO" FOUR BUCKLE ARCTIC



"SNAG-PROOF" PERFECTION COMBINATION SHOE & FELT



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TRADE MARK REG

**H**ERE is another Overland model. A brand new car at a brand new price. Many people prefer a car that is smaller, lighter and more economical to run but with the advantages of the larger and higher priced cars.

Model 75 is a comfortable, family car with virtually all the advantages of the very large cars at a price which is well within your reach.

The price is only \$615!

It has a powerful motor; electric starting and lighting system; high tension magneto ignition; 104-inch wheelbase; cantilever springs; four-inch tires; demountable rims; streamline body design.

This season our factory capacity has been increased to 600 cars a day.

This, in itself, explains our ability to give so much car for so little money.

This newest Overland is a beauty.

The body is the latest full streamline design with a one-piece cowl.

It is handsomely finished in solid black with bright nickel and polished aluminum fittings.

Five adults can ride comfortably.

While the car is roomy, it is light in weight, 2160 pounds.

It has demountable rims with one extra.

The tires are four inch all around because we believe in the advantage of large tires.

They insure greater mileage and comfort than can be obtained from the smaller size used on other cars of similar specifications.

The motor is four-cylinder, long stroke bloc type, having a  $3\frac{1}{8}$ -inch bore and 5-inch stroke. Horsepower is 20-25. It is of the most modern design.

It has high tension magneto ignition. This is the kind used on the most expensive cars.

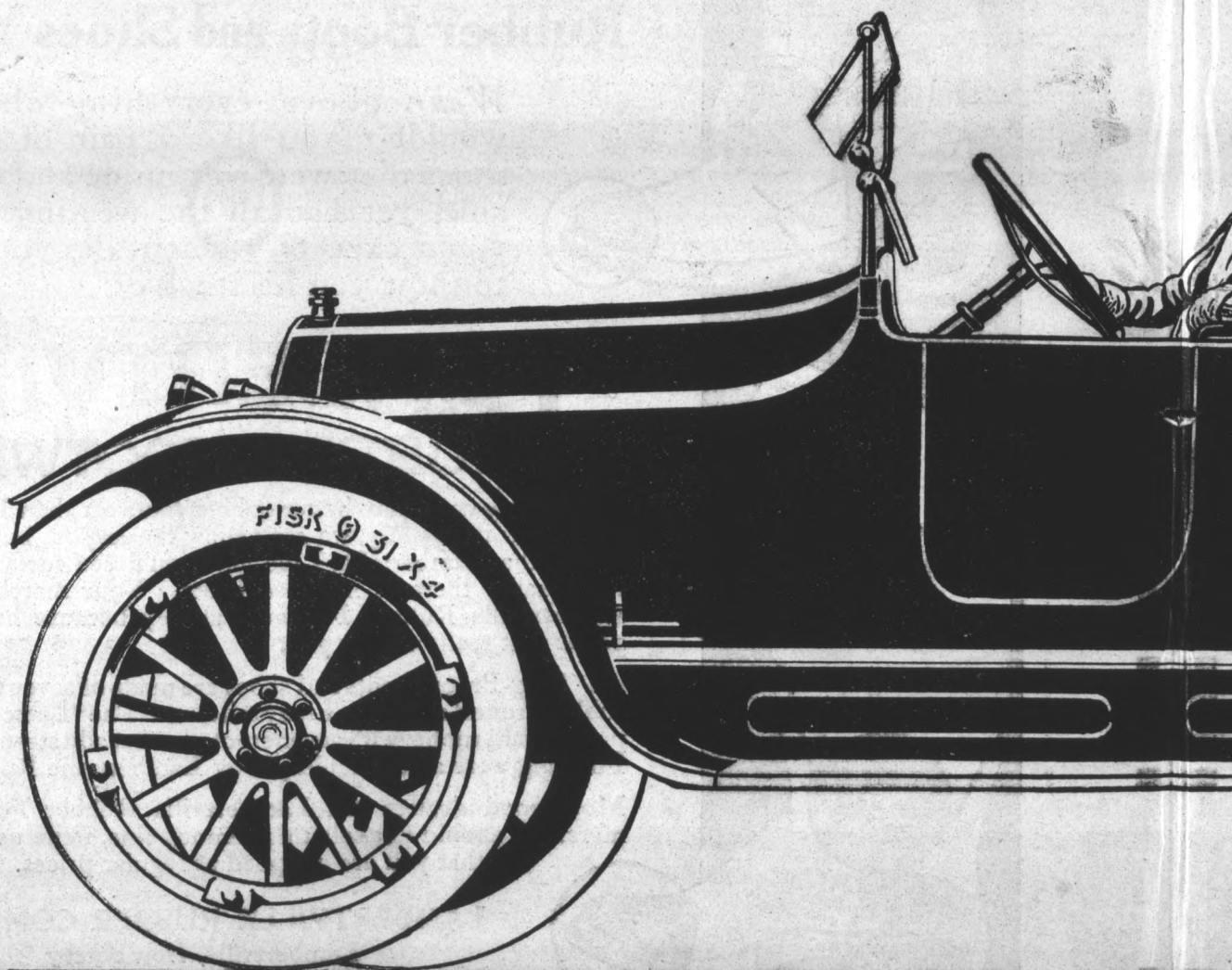
The electric starting and lighting system is one of the most efficient on the market. It is of the two-unit type.

# \$615

Roadster \$595

## With Electric and Electric

Four Inc





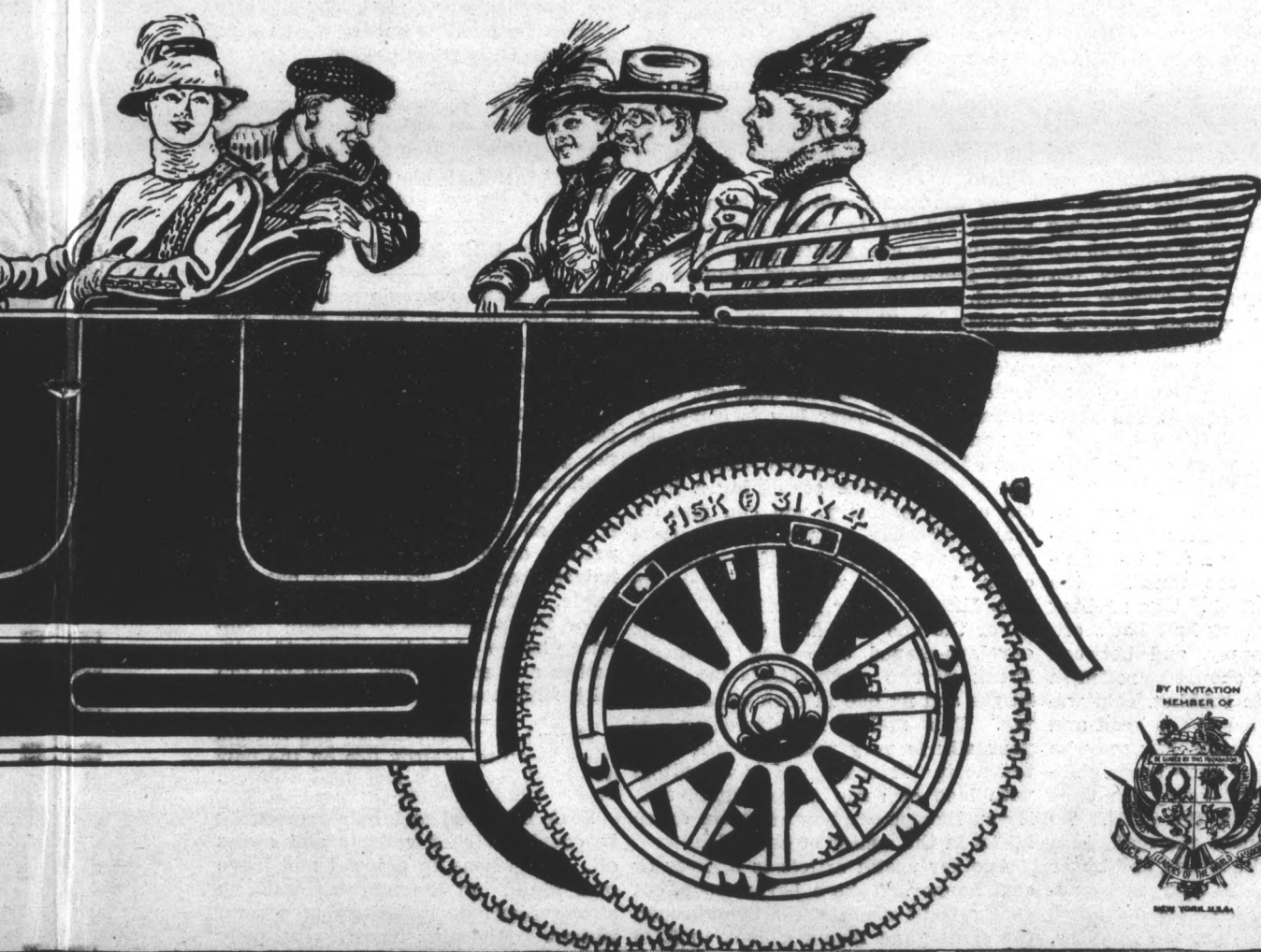
Model 75 - f.o.b. Toledo

75

\$595

Electric Starter  
Electric Lights

31 x 4 Inch Tires



*Overland*  
TRADE MARK REG.

The large electric headlights have dimmers.

This car is very easy to handle. It responds quickly. Anyone in the family can drive it.

The electric switches are conveniently located on the steering column. This is the same arrangement used on the highest priced cars.

It has the easy working Overland clutch which any woman can operate. The pedals are adjustable for reach. The steering wheel is large and turns easily.

The brakes are large and powerful.

The rear springs are the famous cantilever type. These are probably the easiest riding and most shock absorbing springs ever designed. With these springs riding comfort is insured.

The seats are roomy and comfortable for the soft cushions are built over deep coiled springs.

It has a mohair one-man top.

In short, there is everything that makes this car up-to-date and comparable with many cars costing considerably more money.

You will be delighted when you see it. And when you ride in it you'll know instantly that this is your ideal of a modern automobile at your idea of a moderate price.

Other Overland models are—Model 83 five passenger touring car \$750; the famous Overland Six seven passenger touring car \$1145. All prices being f. o. b. Toledo.

See the Overland dealer in your town.

#### Specifications of Model 75

Pure streamline body five passenger touring car	31 x 4 inch tires
Finished in black with nickel and polished aluminum fittings	Non-skids on rear
Wheelbase 104 inches	Left hand drive; center control
High-tension magneto ignition	Floating type rear axle
20-25 horsepower motor; cylinders cast en bloc	Cantilever springs on rear
Electric starting and lighting	Built-in, rain-vision, ventilating type windshield
Headlight dimmers	One-man top
Electric switches on steering column	Magnetic speedometer
	Electric horn
	Full set of tools

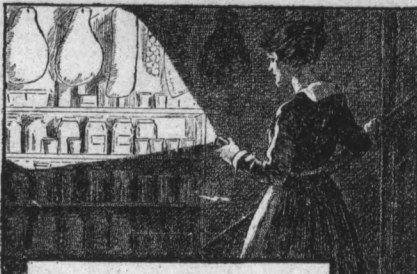
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Down in the cellar or up in the attic, around the house at night or wherever you may be, there's a bright, safe light ready to guide you if you carry an

### EVEREADY FLASHLIGHT

a complete electric light just waiting for the touch of your finger to throw its brilliant rays where you need them. No groping in the dark, no danger of fire, explosion or lights blowing out—the handiest light you ever saw and mighty economical too.

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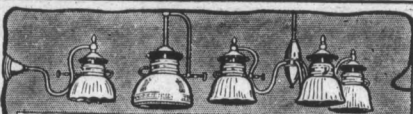
Don't go out in the snow and nasty weather this winter to an out-door closet. Protect the members of your family this coming summer against the fly-breeding, disease spreading privy. Every rural home, school and church should have the convenience and comfort of the

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## Woman and Her Needs At Home and Elsewhere



### The Baby's Temperature

I HAVE long thought of making a list of "Bugaboos of Young Mothers," and when I do, "Temperatures" will head the list. Verily there is no greater bugaboo than this inoffensive word, and no one more greatly or unnecessarily feared. Wherever two or three young mothers are gathered together you may be sure that temperatures bear a large part in the conversation. It often seems as though the new mother spends a half of her time in weighing the baby and the other half in taking his temperature. Then when the temperature is up a half degree above that supposed to be normal, we hear the cry, "My baby has a temperature."

It is to be hoped he has, otherwise he would be beyond help. But there are temperatures and temperatures. I would be the last one to decry the modern mother's attempt to learn everything possible about bringing up babies, but it is well to remember that a little learning is a dangerous thing, and further, that any amount of book learning unleavened by common sense is worse.

As a matter of fact, a raise of temperature in an infant is very often no indication of trouble. If the raise is unaccompanied by any other symptom of trouble, if there is no restlessness or crying or other evidence of pain, the temperature itself is to be ignored. Many infants have temperatures of 104 degrees and show no other sign of trouble. Apparently they are perfectly well, while again a lower temperature accompanied by other symptoms of sickness should occasion alarm.

Very often the temperature is occasioned by a little stomach or bowel disturbance and would be corrected by a purgative or an enema. It is only when the temperature stays up all the time that we need be alarmed and call the physician.

A temperature above normal, accompanied by nervousness is often relieved by applying an ice bag to the head. Lacking this convenience we may often help by removing all clothing, except the diaper, and sponging the body in water at from 80 to 85 degrees. Sponge the infant about ten minutes, then wrap in a blanket. A cold sponge often relieves nervousness with better results than a quieting medicine. The child should lie on a blanket while being sponged, and may be wrapped at once in the same blanket.

The cold pack is more easily done. The child is denuded, laid on a blanket, wrapped in a large towel or small sheet wrung out of water at a temperature of 100 degrees, and then rubbed with ice, the ice touching the sheet but not the flesh. The rubbing may be repeated every half hour, often, where necessary, and between rubbings the infant should be rolled in the blanket. While rubbing, cold water should be applied to the head and a hot iron or hot water bag may be placed at the feet if they seem chilled. This method of using ice does not shock or frighten the child. To give a cold bath, place the child in a tub of water at 100 degrees, and lower the temperature to 80 degrees by adding cold water or ice. Do not leave in the bath more than ten minutes, preferably less, and rub the body well while in the water, at the same time applying water to the head. Take

out, rub the body dry quickly, roll in a blanket and put to bed.

Evaporation baths are sometimes recommended by physicians. In these a loosely woven cloth is wrung from water at a temperature of 115 degrees, the child wrapped in it and the cloth evaporated by means of fanning. Hot applications should be applied to the feet.

DEBORAH.

### Christmas Suggestions

By DOROTHY CLARK

ALONG toward Christmas many of us find that our purse looks, as the old saying goes, "as though an elephant had stepped on it." There are so many people whom we wish to remember with a little gift and one has so little money to spend for them. It is very fortunate therefore, that there are many gifts which may be made with little expense from the odd pieces of material in the house.

Nearly every housewife has a box or drawer where she keeps all the pieces of cloth, trimming, etc., that were left over from garments which she has made. Here is where you will find material for several useful and dainty gifts which can be easily and quickly made.

If you have some pieces of muslin you may be able to find a piece large enough to make a pillow slip for the baby's little pillow. Trim it with a neat edge of lace or embroidery and you will have a useful little gift. Pieces of linen or other white goods may be made into baby bibs. If the material is thin, the bibs should be lined and stitched. Trim with a narrow edge of lace or embroidery and have them fasten with button and buttonhole.

Sachet bags may be made of bits of silk. The real sack containing the sachet powder is put inside of these. Sew the inside bag up and close the outer one with a drawstring of baby ribbon.

For the friend who does fancy work, a bag for her to carry her work in will be an acceptable gift. Take a stiff piece of cardboard, square or round, as you prefer, and cover with a piece of silk. This will make the bottom. For the sides take a straight piece of the goods and gather onto the bottom. Stitch the top and put draw ribbons in and your bag is complete. If you do not happen to have enough silk of one kind for the sides, or, if you wish to make something a little out of the ordinary, you can make a "rainbow" bag. Have the bottom square, and each side of a different color. The draw ribbons, too, may be of a different color if desired.

For the one who does tatting a flat envelope-shaped case may be made. Break off two corset steels the right length and fix one in each edge of the top. This makes it self-closing. If your silk is very thin you will have to line it. Trim the ends and bottom with lace or some fancy stitch, and, if you like, place a bow of ribbon or an initial in the center of one side.

Another useful article is a dress or coat hanger. Take a barrel hoop, cut off the right size, make a hole through the center and fasten a hook in it to hang up with. Pad and wind with some pretty soft material. Wind the hook closely with baby ribbon and

trim the rest of the hanger with the same kind of ribbon.

Dainty jewelry or trinket boxes for a girl's dressing table may be made out of cigar boxes or other small wooden boxes. Pad and line them with some dainty material. Cover the sides and top with any pretty shirred goods you happen to have. The bottom need only be covered, not shirred. On the edge of the cover fasten a ring or loop of ribbon to open with. Narrow ribbon may also be fastened along the edge of the top and made in tiny bows at the corners.

Some kinds of fruit baskets—those without handles may be treated like the box just described, and used for work baskets or post cards. I saw a very pretty one covered with light blue and trimmed with white ribbon. However, if it were to be used as a work basket it would be better to use colors which would not sell so easily.

Even pieces of calico and gingham may be utilized in making Christmas gifts. If you have quite a few of them you can piece a little comfortable for the baby's bed. Do the piecing on the sewing machine and it will not take long. Holders are always useful and are something the busy housewife never has too many of. Half a dozen of them will make a very acceptable gift for her. Both sides may be alike or you may use contrasting colors. If you would like an initial on them, draw it with chalk and stitch over several times on the machine. Pad, stitch and fasten a loop or ring in one corner. You may make one or two of better cloth if you wish, to be used to pour the tea with "when company comes."

Cute little penwipers for those who write may be made of soft materials. Make several leaves to them and buttonhole the edges with a contrasting color of san silk. On the middle of the outside paste a picture of a pretty girl and around it outline the words, "Let me clean your pens."

These little gifts which I have described can be made by the woman who does not do elaborate fancy work. One will find that by making several of these the strain on one's pocket-book will be considerably lessened.

### BED BOOTEES.

BY M. PELTON WHITE.

An inexpensive, easily made and very acceptable Christmas gift for a person who suffers from cold feet is a pair of bed bootees.

Eiderdown, flannelette, or any soft thick material is suitable. Cut a paper pattern the shape of a stocking foot, making it large enough to slip on easily and allowing for seams. Have it extend well above the ankles. Lay pattern on fold of goods. Stitch two halves together, leaving top open to ankle. Make a lining of contrasting color the same size as outside. Slip lining inside of bootee, seam sides together and edges even. Bind the top with ribbon and sew rosette at front.

Household Editor:—Can you tell me what to do to destroy lice on the hair and clothes? Have just used a lotion, also alcohol, without success.—J. F.

Soak the head and hair thoroughly in equal parts of vinegar and sweet oil. Wrap head in a towel and leave over night. In the morning wash in strong soapsuds and rinse in several waters. For nits, brush vigorously with a brush dipped in vinegar. This method is used successfully by the nurses in the Detroit public schools.



# Grange.

## THE GRANGE AND THE PROBLEM OF DISTRIBUTION.

(Continued from last week).

Long essays on co-operation, co-operative companies, and intricate mathematical calculations about the consumer's dollar are all right. They are incidents in evolution which must needs be, but after all, when we measure the value of different influences, there is nothing like a demonstration.

The writer endeavored to supply peaches during the past season to some friends not in the peach growing district, but had difficulty in doing so because the fruit was so perishable. If the writer lives another year, and feels as much like work as he now does, this is what he resolves to try out: Arrange for a Grange rally at the largest point on the railroad in a few counties where peaches are not grown. Let the patrons come to this rally, not to listen to addresses, but to get peaches. The fruit could go from the shipping station in refrigerator cars, properly iced, and would reach its destination in perfect condition. If the entire contents of the car was not needed in one county, it could be taken on to the next. Indeed, it would be possible to stop the car in three or four counties if it were necessary, providing that the trains ran at such periods as to admit of two stops in one day. This would be likely to be the case in most counties. In this way fruit could be distributed with the least possible loss, and with far less labor than in any other way.

It may be that a trial of our plan will humble us a lot, but we propose to try it under the conditions and with the reservations before noted, and we farther agree to confess the fact if it does not work.

It seems to us that one of the greatest things the Grange can do for a community is to teach the individuals that compose it to work together. There would be almost no limit to the things we might do along co-operative lines, if we were so constituted that we could all work together to this end.

Our Grange system of co-operative buying has been an educator in this way. We should endeavor to adapt it constantly to the changing needs of our membership, and gradually but surely we should make progress in the solution of the problem of co-operative selling.

The unit of successful co-operation is the individual, just as the unit of Grange activity is the individual brother or sister. We are all apt to magnify the power of the association, and minimize the worth of the individual.

It is the glory of the Grange that it develops the individual man and woman. It is going to make successful co-operation possible after a while because of what it is doing for men and women as individuals. Referring again to our plan of distributing peaches. It would surely fail were it not that in every county where the Grange has lived for some time, it has assembled a large number of people who are reliable. If arrangements are made in advance, they will meet that car on the right day. They will bring their money with them, and it will be possible to do business. There is not in all Michigan a class of men whose credit is better than those we have in our order.

W. F. TAYLOR.

## STATE GRANGE MEETING.

The daily meetings of State Grange at Ann Arbor, December 14-17, 1915, will be held in the Hill Auditorium. The University will tender a musical program on Tuesday and a reception on Thursday. The fifth and sixth degrees will be conferred Thursday evening.

# Farmers' Clubs

## STATISTICAL REPORTS.

The Associational Secretary desires to call the attention of the secretaries of local Clubs to the importance of sending in the statistical report early this year so that the 1915 report of the State Association can be published by the first of February. These reports should be forwarded to the Associational secretary at once, in order that she may have the statistics compiled before the annual meeting, which occurs the second week in December.

## CLUB DISCUSSIONS.

**Discuss Seasonable Topics.**—Washington Center Farmers' Club met at the home of Mr. and Mrs. W. C. Long, November 11. Opened with music by the Club. After the regular business was disposed of the secretary read several interesting letters from former members of the Club. "Feeding and winter care of farm animals" was discussed by C. M. Curren and others, after which the session was adjourned for dinner and the social hour. The afternoon session opened with music by the Club. Roll call was responded to by naming some article made in the United States. Many things were mentioned, even "cheap politicians." The question of keeping up the farm buildings came in for a warm discussion, especially the lightning rod question. Charles Mathews furnished a fine paper on "Dairying in Michigan." "How can we improve our rural schools?" Many suggestions and arguments for and against the present system were given. There were a number of "ye old time teachers" present who thought there was room for improvement. Mrs. C. A. Mathews gave a fine temperance recitation, which was very appropriate at this time. "A school house on every hill." The Club elected Mr. and Mrs. Frank Heinlen delegates to the State Association of Farmers' Clubs. The next meeting of the Club will be held at "Beech Grove," with Mr. and Mrs. E. P. Foster on December 9. All members are urged to be present. Election of officers and other important business to transact.—Mrs. S. N. F., Cor. Sec.

**A Thanksgiving Program.**—The November meeting of the Ray Farmers' Club was held at the home of Mr. and Mrs. Wm. Rowley, Thursday, November 11. After a substantial and satisfying chicken-pie dinner, the meeting was called to order by the president, J. A. Priest. The regular business was transacted, after which the program was taken up. Roll call was responded to with Thanksgiving quotations, 50 responding. The program was opened with music by the Club, followed by prayer and a Thanksgiving reading by Mrs. F. E. Mills. The question open for discussion was "The Farmer's Banking Problem," led by J. A. Priest, who read a paper on how they were doing banking business in different places, which was very instructive. He also said his opinion was that if farmers would improve their property and keep it in first-class condition it would be a better investment than banking all their money. Remarks by Messrs. Gilmore and Broughton were very interesting. Next meeting at the home of Mr. J. T. Wyman, December 9.—Cor. Sec.

**Talk on Live Stock.**—The November meeting of the North Shade Farmers' Club met at the home of J. R. Hudson in Middleton. After a pleasant social time at the dinner hour, the program was taken up, Ray Salisbury presiding. The roll call was responded to by the gentlemen telling their choice of live stock, the ladies their choice of poultry. The question, "Shall we specialize in live stock in this community?" was opened by Ray Salisbury. He spoke of the value of dairy breed, giving some statistics of the Jersey breed; Mrs. Nettie Todd read extracts from an article in the November American, "Youth leads the way—pigs and baby beef." Mr. Hudson gave a talk on "The relation between the farmer and the banker," which was full of practical suggestions and which was discussed by James Cusic. Miss Otto gave a fine reading. James Cusic was elected as delegate to the state meeting at Lansing in December, and a piano solo by Miss Hudson closed the program. The next meeting will be the first Friday in December at James Cusic's home.



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# Markets.

## GRAINS AND SEEDS.

November 23, 1915.

**Wheat.**—Continued heavy receipts at primary elevators and a shortage of cars for moving grain were important factors in depressing quotations during the past week. The United States visible supply increased over six million bushels, and primary receipts were nearly four million bushels. Foreign buying has been on a smaller scale notwithstanding Liverpool's stores have been reduced since last week. The mills are liberal buyers and the production of flour is heavy. One year ago No. 2 red wheat was quoted locally at \$1.13½c per bu. Prices for the past week were:

	Red.	White.	Dec.
Wednesday	1.12½	1.09½	1.14
Thursday	1.13½	1.10½	1.15
Friday	1.13	1.10	1.14½
Saturday	1.11	1.08	1.13
Monday	1.11	1.08	1.13
Tuesday	1.11	1.08	1.13

Chicago.—December wheat \$1.03½; May \$1.06¼.

**Corn.**—The bears are being supported by general reports of inferior grades of corn predominating in most of the important corn sections. Farmers are feeding the soft and moldy corn to hogs liberally. There has been a notable decrease of country offerings of this grain. The visible supply increased 329,000 bushels. One year ago No. 3 corn was quoted at 73c per bushel. Last week's prices were:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday	68	69
Thursday	68	69
Friday	68½	69½
Saturday	68½	69½
Monday	67½	69
Tuesday	64	65½

Chicago.—December corn 63.5c; May 67.3c.

**Oats.**—Prices have held within narrow limits with both supply and demand fair. Inquiry from seaboard trade was conspicuous. Visible supply increased over a million bushels. One year ago standard oats were quoted at 51c per bushel. Last week's prices were:

	Standard.	No. 3 White.
Wednesday	39½	38
Thursday	39½	38
Friday	39½	38½
Saturday	40	38½
Monday	40	38½
Tuesday	40	38½

Chicago.—December oats 39c; May 41.1c per bushel.

**Rye.**—No. 2 rye 1c lower at 98c per bushel.

**Barley.**—Malting grades are higher at Milwaukee at 62¢68c; at Chicago 58¢70c is being paid.

**Peas.**—Crop short, demand fair. At Chicago new offerings \$2.35@2.60 per bushel, sacks included.

**Beans.**—Prices firm, offerings small. At Detroit cash beans are quoted at \$3.50; November \$3.40; December at \$3.20 per bushel. Chicago trade is firm with hand-picked Michigan pea beans, new crop, at \$3.90@4; prime \$3.70@3.80; red kidneys \$4.75@5.

**Clover Seed.**—Market dull; prime spot and December \$12.05; March \$12; prime alsike \$10.20. At Toledo prime cash \$12.10; prime alsike \$10.30.

**Timothy Seed.**—Steady at \$3.65 for prime spot.

## FLOUR AND FEEDS.

**Flour.**—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$5.90; seconds \$5.70; straight \$5.40; spring patent \$6.20; rye flour \$5.80.

**Feed.**—In 100-lb. sacks, jobbing lots are: Bran \$28; standard middlings \$25; fine middlings \$30; cracked corn \$30; corn and oat chop \$28 per ton.

**Hay.**—No. 1 timothy \$18@19 a ton; standard timothy \$17@18; light mixed \$17@18; No. 2 timothy \$15@16; No. 2 mixed \$10@12; No. 1 clover \$10@12.

**Straw.**—Wheat and oat straw \$6.50 @7; rye straw \$8@8.50 per ton.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—Fancy grades of creamery are scarce; prices have advanced 1c. Ordinary stock quoted easy. Extra creamery 31c; firsts 30c; dairy 21c; packing stock 19c.

**Eggs.**—Trading was light on account of scarcity of fancy creamery. The demand for this kind of butter caused an advance of 1c. The price, based on sales, is 31c.

Chicago.—Receipts generally are

light and fancy makes are scarce. Prices of quality goods has advanced but that of undergrades remains the same. Extra creamery 31c; extra firsts 30c; firsts 26¢29c; extra dairies 20c; packing 19¢20c.

**Eggs.**—The market is firm at last week's prices. Receipts are moderate. Current receipts are quoted at 30c; candled firsts 31c.

Chicago.—New laid eggs bring premium prices. Other so-called fresh eggs are in fair demand. Prices are slightly lower than last week. Firsts 28½¢29½¢; ordinary firsts 26½¢27½¢; miscellaneous lots, cases included, 20¢29c; refrigerator April extras 21½¢.

**Poultry.**—Thanksgiving demand for all poultry is good and prices are higher. Turkeys 16¢17c; spring turkeys 21¢22c; fowls 9¢13c, according to quality; spring chickens 12½¢13c; ducks 15¢15½¢; geese 14½¢15c.

Chicago.—Fowls and springers are slightly lower and turkeys have advanced slightly. Supply and demand are good. Light weight turkeys not wanted. Turkeys 15¢16c; spring turkeys 17¢18c; fowls 9½¢11c; springs 12c; ducks 12¢13½¢; geese \$10@13½¢.

## FRUITS AND VEGETABLES.

**Apples.**—Are in fair demand. Prices for common stock are lower. Fancy \$3@3.50 per bbl; common \$1@1.25; at Chicago the demand is good for choice fruit but common stock is easy. The demand is for small lots. No. 1 Greenings \$2.50@3; Jonathans, No. 1; \$3@3.25; Baldwins \$1.50@2.50; Wagener \$2@2.50; Spies \$1.75@3.25; bulk apples \$1.25@2.00 per car, depending on the quality.

**Potatoes.**—Receipts are ample and demand moderate. Many off-grade potatoes being received. Minnesotas are quoted at 65¢70c; Michigan 60¢65c per bu. At Chicago the trade is active and market firm at advanced prices. Michigans are quoted at 50¢60c; quality poor. Other prices range from 50¢68c.

## WOOL.

Boston.—Sales are large and prices are hardening with no promise of a decline for a long time to come. Supplies are limited. The market for manufactured goods is very broad, which with general prosperity and a shortage in the world wool supply ought to keep values on a high basis. Foreign prices are higher, including quotations in the production countries of Australia, South America and South Africa. Michigan delaines are quoted at Boston at 28¢29c; do. combing 32¢37c; do. clothing 24¢30c.

## GRAND RAPIDS.

Turkeys are scarce for Thanksgiving trade and dealers are paying 18¢19c live weight for them, also 11c for chicken, 12½¢ for geese and 13¢14c for ducks. Fresh eggs continue to be scarce and dealers have paid up to 36c this week. The potato market is somewhat stronger, with prices advancing to 58c recently at Traverse City, though 50c has been the top at Greenville and 45c at other loading stations. White pea beans range from \$3@3.25. Grain prices do not show much change and hay is bringing \$14@17.

## DETROIT EASTERN MARKET.

The Thanksgiving demand brought abundant poultry to the market Tuesday morning. Live chickens 75¢90c each; dressed 18c lb; ducks, dressed 22c; live 75c@81c each; geese, live \$1.50@2 each; turkeys, live 25c per lb; potatoes 85¢90c; apples 50c@1.25; turnips 50c; cabbage 65c; onions \$1; eggs 45c per doz; loose hay selling slowly around \$20 per ton.

## LIVE STOCK MARKETS.

### Buffalo.

November 22, 1915.

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

Receipts of stock here today as follows: Cattle 290 cars; hogs 150 d. d.; sheep and lambs 48 d. d.; calves 1800 head.

With 290 cars of cattle on our market here today, the market was in the worst shape of the season, it being 25¢50c per cwt. off, and they could not all be sold. This being Thanksgiving week buyers bought very few cattle. They bid 60c per cwt. lower than last week on some cattle here tonight. Now unless there is a letup we do not look for much better prices. They are putting them in too thick. Would advise holding good cattle back and feeding corn until the glut cleans up; think they will be better in two or three weeks, as the Canada cattle are mostly in. We had a fairly liberal run of hogs

today and a severe set-back in prices, a good many hogs showing a loss of fully 40c per cwt, from Saturday's best time. While the bulk was a strong 25¢35c lower than the opening market on Saturday, about everything outside of pigs and lights sold at \$6.60, with a few fancy loads of hogs, closely sorted, at \$6.70; pigs and lights \$6@6.25. Trade not very active and quite a number of late arrivals went over unsold. Roughs sold at \$5.50 generally and stags at \$4.50@5. While our market looks reasonably low compared with other points, it does not appear like we will get much if any better prices before the end of the week.

The lamb market was active today, prices 15c higher than the close of last week. All sold and we look for steady to strong prices the balance of the week.

We quote: Lambs \$9.15@9.25; cull to fair \$7@9; yearlings \$6.75@7.50; bucks \$4@4.75; handy ewes \$5.25@5.50; heavy ewes \$5@5.25; wethers \$5.75@6; cull sheep \$3.50@4.25; veals, good to choice \$10.75@11; common to fair \$8.50@10.50; Heavy \$6@9.

### Chicago.

November 22, 1915.

Cattle. Hogs. Sheep.  
Receipts today..23,000 45,000 20,000  
Same day 1914.. 9,995 16,228 20,153  
Last week.....58,767 219,614 89,389  
Same wk 1914..30,491 132,227 65,840

Shipments from here last week amounted to 7,231 cattle, 40,087 hogs and 1,006 sheep, comparing with 4,520 cattle, 14,740 hogs and 1,663 sheep the preceding week. No shipments were made in the corresponding week last year. Hogs received last week averaged only 186 pounds.

Cattle of desirable quality sold today at steady prices, others being slow of sale at largely 10c lower prices. Hogs were active at stronger prices, some selling a little higher. Sales ranged at \$5.60@6.75; pigs advanced sharply, best going at \$5.75.

Cattle were marketed liberally last week. The bulk of the steers crossed the scales at \$7.25@9.50, the lack of prime corn-fed beefs being more marked than ever, and no fancy yearlings or heavy long-fed steers were offered. The best yearling steers offered brought \$9.75@10.25, but strictly prime yearlings would have sold as high as \$10.50. Good yearlings were purchased at \$9 and upward, and sales ranged all the way down to \$4.25@6.25 for inferior to fair lots pastured during the summer and fall. Warm-up steers sold at \$6.30@7.60, short-fed lots at \$7.65@8.80, good corn-fed lots at \$8.85@9.60 and choice heavy lots at \$9.65@10.30. Butchering lots of cows and heifers had a good outlet for desirable lots, sales ranging at \$4.35@9.25 for inferior to fancy yearling heifers and at \$4.60@7.25 for cows, few heifers going higher than \$7.50. Cutters sold at \$4@4.55, canners at \$2.50@3.95 and bulls at \$4@7.50 for light canners to prime heavy kinds. Western range cattle were active, with steers salable at \$6.75@8.80 and cows and heifers at \$3.75@7.35. Calves found buyers at \$4@9.75 per cwt. for coarse heavy to prime light vealers, with early week sales as high as \$10.50. Thanksgiving poultry affected cattle sales appreciably. The holiday will be observed at the stock yards. The bulk of the cattle closed 25¢40c lower than a week earlier.

Hogs were marketed in greatly increased volume last week, and although eastern shippers enlarged their purchases the ample supply left enabled local packers and smaller butchers to force prices much lower. While rallies took place, average prices reached the lowest level recorded since February, 1912. Prospects are strong that all kinds of swine will sell still lower, since heavy marketings are almost certain for weeks ahead. While the receipts of hogs are large, weight is lacking, and the Tuesday average was only 181 lbs., the average to the carload being 89 head. At the week's close hogs brought \$5.65@6.75, the lowest prices yet reached, comparing with \$6.15@7.30 a week earlier, while pigs sold at \$3.50@5.75. Light bacon hogs brought \$5.65@6.20, selected light shipping hogs \$6.25@6.45, selected 260 to 300-lb. packing hogs \$6.50@6.55, the best heavy shipping hogs \$6.60@6.75 and pigs \$3.50@5.75.

Sheep and lambs were received in much larger numbers than a week earlier, although in much smaller supply than in normal times, and while prices suffered reactions at times, ruling lower even for the best lots, prices were very much higher than in most former years. Much of the lamb supply consisted of short-fed lots and medium-fleshed western from the soft corn belt and sold unsatisfactorily. Lambs closed 25¢40c lower than a

week ago, with yearlings unchanged at \$5.75@7.60. Sheep were mostly 10¢15c lower. Lambs closed at \$6@8.90, wethers at \$5.60@6.15, ewes at \$3@5.60 and bucks at \$4.25@4.75.

Horses were in much smaller supply last week than usual. British army buying orders have ceased. The French buyers bought more horses than usual, however, this helped out sellers. The average quality was ordinary, and few sold at high prices, there being a marked lack of the big kind selling at \$220@240 and upward. Inferior animals sold at \$25@75, drivers at \$80 and upward, choice ones being worth up to \$175@200, light wagoners at \$125@150 and chunks at \$150@210.

(Continued from page 484).

crop and many of those have rotted. Many acres of beans never cut on account of rains, consequently they are scarce. Pea beans \$3.50@4; red kidney \$5.50@6. Corn about two-thirds of a crop but good crop of fodder. The farmers will have plenty of cornstalks for the cattle but most of them will have to buy hay. There are lots of oats and wheat. Wheat \$1; hay \$18 a ton; potatoes 80c per bu; apples \$2.50@4 per bbl; butter 28c; eggs 36c.

### Nebraska.

Scotts Bluff Co., Nov. 14.—We have had but one light rain in the last 30 days. Corn is drying nicely but is about 50 per cent soft; threshing is done; but little grain to sell and none to ship except wheat and rye. Only one case of hog cholera in the county this fall, and the eastern Nebraska feeders are coming here for feeder hogs. There will not be quite as many sheep fed as usual. The beet harvest is about finished, the yield was about 16 to 18 tons per acre. Potatoes yielded from 200 to 400 bushels per acre and bring 50c per cwt. on track in bulk, not sacked. Wheat 80c; rye 70c; cream 28c; butter 25c; eggs 25c.

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## THIS IS THE LAST EDITION!

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

## DETROIT LIVE STOCK MARKETS.

Wednesday's Market.  
November 24, 1915.  
Cattle.

Receipts 1732. Market steady and very dull. Best heavy steers \$7.25@7.60; best handy weight butcher steers \$6.25@7; mixed steers and heifers \$5.50@6; handy light butchers \$5.25@5.75; light butchers \$4.50@5.25; best cows \$5@5.50; butcher cows \$4.50@4.75; common cows \$4@4.25; canners \$3@3.75; best heavy bulls \$5.25@5.50; bologna bulls \$4@4.25; stock bulls \$4@4.50; feeders \$6@6.75; stockers \$5@5.50; milkers and springers \$40@85.

Sandel, Stacy, B. & G. sold Mich. B. Co. 1 bull wgh 700 at \$4, 3 steers av 753 at \$6; to Golden 12 butchers av 715 at \$5.25, 3 do av 563 at \$4.25, 1 bull wgh 860 at \$4, 1 cow wgh 1320 at \$5.25; to Fineman 1 do wgh 1320 at \$5.25, 4 do av 1105 at \$4.50; to Brown 5 do av 872 at \$3.25, 2 do av 1030 at \$4; to Hammond, S. & Co. 1 bull wgh 1210 at \$5.25; to Bresnahan 5 butchers av 690 at \$5.25; to Feldman 6 do av 705 at \$5; to Mason B. Co. 1 bull wgh 1330 at \$5.25; to Breitenbeck 19 steers av 810 at \$6, 2 cows av 1000 at \$4, 2 do av 1120 at \$4.50, 1 do wgh 900 at \$4; to Bray 2 stockers av 705 at \$6, 16 feeders av 700 at \$6.25, 14 stockers av 670 at \$6.25, 5 feeders av 778 at \$6.50; to Bresnahan 12 butchers av 623 at \$5; to Feldman 17 do av 731 at \$5, 2 cows av 1005 at \$5, 2 canners av 945 at \$3.50; to Mason B. Co. 1 cow wgh 1100 at \$5.50, 1 bull wgh 1330 at \$5.25, 5 cows av 750 at \$4.80, 3 steers av 927 at \$6; to Kamman B. Co. 15 butchers av 1056 at \$6.10; to Boyer 4 cows av 760 at \$4.50; to Mason B. Co. 8 butchers av 546 at \$5.35; to Feldman 4 cows av 1057 at \$4.75, 5 do av 730 at \$4.50; to Hammond, S. & Co. 1 cow wgh 1450 at \$5.75, 1 do wgh 930 at \$5, 16 butchers av 731 at \$5.50, 2 steers av 1100 at \$7, 1 bull wgh 1250 at \$5.50, 8 butchers av 636 at \$5.50.

Haley & M. sold Sullivan P. Co. 6 steers av 991 at \$6.70, 2 do av 755 at \$5.50; to Hammond, S. & Co. 6 butchers av 733 at \$5.25; to Bray 32 stockers av 621 at \$5.25, 7 do av 580 at \$5; to Bresnahan 7 butchers av 693 at \$5.20; to Wohlberg 14 stockers av 561 at \$4.75; to Schroeder 5 steers av 884 at \$6.60, 1 do wgh 850 at \$6; to Dingman 3 cows av 1140 at \$5.15; to Rattkowsky 3 do av 1240 at \$4.75.

## Veal Calves.

Receipts 498. Market steady. Best \$10@10.50; others \$6@9.50.

Bishop, B. & H. sold Friedman 8 av 190 at \$10, 4 av 118 at \$5; to Hammond, S. & Co. 2 av 145 at \$8.50, 5 av 185 at \$10, 5 av 150 at \$10.50; to Sullivan P. Co. 5 av 130 at \$9.50, 3 av 140 at \$10, 1 wgh 170 at \$10.50, 2 av 145 at \$10, 2 av 185 at \$10.50; to Thompson Bros. 5 av 155 at \$10.50, 1 wgh 140 at \$11, 2 av 140 at \$11, 1 wgh 160 at \$10.

Sandel, S., B. & G. sold Parker, W. & Co. 2 av 155 at \$10, 3 av 120 at \$9, 2 av 145 at \$9, 1 wgh 240 at \$8, 1 wgh 130 at \$8; to Sullivan P. Co. 8 av 150 at \$9.50, 1 wgh 130 at \$10, 3 av 145 at \$10, 1 wgh 150 at \$7.50, 2 av 150 at \$9.50, 1 wgh 260 at \$7.50, 2 av 160 at \$9.50.

## Sheep and Lambs.

Receipts 566. Market, lambs 15c higher; sheep steady. Best lambs \$9; fair do \$8@8.25; light to common lambs \$6.50@7.50; fair to good sheep \$4.50@5.25; culls and common \$3@4.

Haley & M. sold Nagle P. Co. 7 sheep av 95 at \$5.50, 4 do av 125 at \$5.50, 4 do av 110 at \$4.50, 6 do av 100 at \$4.25, 28 do av 90 at \$4, 17 do av 110 at \$4.75, 7 do av 105 at \$4.50, 51 lambs av 83 at \$8.85, 16 do av 80 at \$8.85, 51 do av 80 at \$8.85, 58 do av 83 at \$8.90.

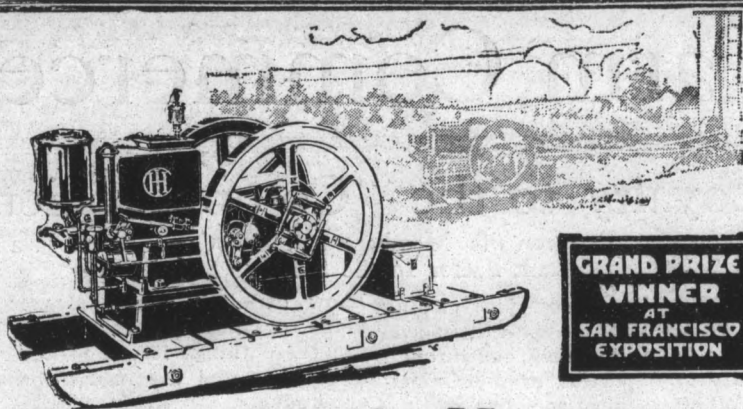
Reason & R. sold Nagle P. Co. 30 lambs av 75 at \$8.75, 26 sheep av 105 at \$5, 38 lambs av 80 at \$8.65, 22 do av 80 at \$8.75, 14 do av 90 at \$8.50, 38 do av 75 at \$8.65.

Roe Com. Co. sold Nagle P. Co. 40 lambs av 60 at \$7.50, 16 do av 80 at \$8.50, 5 sheep av 110 at \$4.50.

Bishop, B. & H. sold Hammond, S. & Co. 12 lambs av 65 at \$8, 171 do av 78 at \$8.75, 29 do av 70 at \$8.75, 43 do av 65 at \$8.50, 59 do av 60 at \$8.50, 26 do av 50 at \$8, 11 sheep av 100 at \$4.50, 6 do av 115 at \$4.50; to Sullivan P. Co. 14 lambs av 60 at \$7.50, 13 do av 48 at \$7.25, 16 do av 80 at \$8.85, 17 do av 55 at \$7.50, 52 do av 75 at \$8.75, 13 sheep av 90 at \$3.50, 11 lambs av 78 at \$8.25; to Swift & Co. 16 sheep av 125 at \$5.25, 6 do av 125 at \$5, 9 do av 150 at \$4.50, 111 wethers av 120 at \$6.

## Hogs.

Receipts 8273. Market steady. Pigs \$5.50; yorkers and mixed \$6.25@6.45.



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*E. B. Marshall* President  
WILBUR'S STOCK FOOD CO., 894 Huron Street, Milwaukee, Wis.

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I own \_\_\_\_\_ cattle \_\_\_\_\_ horses \_\_\_\_\_ hogs \_\_\_\_\_ sheep \_\_\_\_\_ poultry \_\_\_\_\_  
I own \_\_\_\_\_ acres of land. I rent \_\_\_\_\_ acres of land. I am \_\_\_\_\_ years of age.  
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# Farm Commerce.

## Loyalty to the "Co-op" Society

The Agreement Between the Members and the Organization Is a Most Important Factor In the Society's Success.

**D**URING the season just closing two Michigan co-operative societies have been menaced through disloyalty of a portion of their members. Whether these societies will escape disaster is a matter for the future to decide, but the reason for their uncalled-for handicap, is so important to the development of co-operative marketing and buying, that we should not allow the matter to pass without serious reflection.

We cannot recall a single instance where a reasonably well-organized mutual association has been launched that the community served has not received much benefit during the life of the organization. Not only those who participated in the direct advantages coming from dealing through the society, but every other person who had the same class of goods to sell or buy, made a profit or saved money by reason of private dealers attempting to compete with the organization.

### Outsiders Often Save the Day.

In the very face of these benefits which members and neighbors alike recognize, it is a difficult matter to explain the real ingratitude of some members and other beneficiaries toward those who are attempting to foster the work. Some will offer to come into the organization, participate in the advantages and declare upon their honor that they will stand by during trials and tribulations, only to withdraw at the crucial hour when the association is endeavoring to fill its orders, and leave the management in "the hole." Others impudently declare that they secure as much benefit from the outside as they would if members, and refuse to take any of the responsibility whatsoever. On the other hand, it is not infrequent to find a few who, though they refuse to join at the outset, are willing to support the work in the event that their help is needed, and they do. Different association managers have declared to the writer that during crucial periods in the life of co-operative societies, it was the help of this latter class that prevented dissolution.

### Experience Removes Suspicion.

The presumption is that suspicion is at the bottom of this disloyalty. Not being trained in the matter of working together these men may fear that they are taking a chance by trusting the sale of their goods to another person. This presumption is likely to be correct inasmuch as with men who are trained in co-operative work, disloyalty is not a problem. They gain confidence in their manager and soon learn that he not only can sell farm products as well, but because of special qualifications, better than the producer can.

But whatever may be the reason, it remains a fact that no co-operative society can succeed unless the members remain true to the organization. Faithless members are more certain to bring failure than antagonistic and unfair competition of private concerns. The agreement between the members is the foundation stone upon which the co-operative organization stands. That alone makes the organization possible. Remove it and there is nothing. Loyalty has the same relation to the success of this work that it has in the organization of an army for the prosecution of a military campaign.

If a satisfactory membership agreement can be entered into then the society not only can count upon certain men to stand behind it, but it will

know definitely what sales it must make, or what purchases, and knowing these things it can proceed intelligently to find the requisite markets or products.

### The One Certain Way.

Experience teaches that there is but one sure way of binding the members to the organization and that is by making the obligation one that will stand in courts of equity. A contract to share in the responsibilities of the organization should be signed by every member. The damages which may result from the failure of a member to perform his part in the agreement may be agreed upon in this same instrument. The Citrus Growers' Exchange have such a provision in their agreement which stipulates that the damage caused by outlays incurred and to be incurred by the organization in providing means for selling and marketing the fruit of the member is impossible to estimate and fix at the time of signing the agreement and, therefore, the same is estimated and agreed upon as 25 cents for each box of fruit grown or sold, which sum shall be allowed in any action brought by the organization to recover damages for the breach of the agreement by the member.

### Loyalty Insures Success.

Now it is probable that it would be a slower and more difficult matter to organize co-operative organizations where the members knew that they would be required to sign an iron-bound contract; but if this had been done in every attempt to bring into being such organizations in the state it is more than probable that Michigan would be farther ahead today in the matter of her farmers' working together in the sale of their products.

We have some successful mutual associations in the state that have not used this means of holding members together. These organizations are to be congratulated for surviving the vicissitudes which commonly befall such efforts. Still other attempts may succeed without this stringent precaution, but if it is taken, failure will be far more remote in that the organization can be launched with well-grounded confidence and the management can go ahead positively knowing that it has a substantial backing, which confidence and knowledge are almost certain to insure success from the start.

### EGGS BY PARCEL POST.

The question of marketing eggs by parcel post is no longer a new one, and probably most poultrymen are familiar with its possibilities. However, the small percentage of breakage has discouraged some who have tried the method and a few words of advice may not be out of place. It is evident that breakage is caused by careless packing in many cases; in a few instances it is due to the carelessness of postal employees. When the service was first inaugurated mail clerks had not learned to be careful with handling the packages, hence there were a large number of breakages. It is stated on good authority that less damage is reported, as the service becomes better understood by the postal authorities. Some two years ago the Department of Agriculture, after an experiment extending over five months, reported that something like three per cent of the eggs shipped were broken. Of these something like two per cent were totally unfit for use.

From observation and experience it is evident that parcel post shipping is not of equal value to all, that is, the poultryman who is located near an express office can use the express company to better advantage, shipping his eggs in the regulation 30-dozen case. On the other hand, the parcel post brings to the very door of others, who may be ten miles from an express office, a means of getting their eggs to the same market with the man more favorably located. It is plain, therefore, that the parcel post is particularly valuable to those farmers who live out on the rural delivery routes rather than to those near railway stations and centers of population.

One of our neighbors ships his eggs to a city 75 miles distant, using the 15-dozen case. He uses this method because he does not keep a team, and therefore finds it inconvenient to get to the express office some six or seven miles away. It is in just such cases as this that the parcel post is particularly valuable. Another way that it proves of value is in shipping small lots to individual customers. A dozen eggs, properly packed for the mail weighs between two and three pounds. In the first and second postal zones the postage would be seven cents. Two-dozen size packages can be sent for nine cents, a fact which proves that larger shipments are the more profitable. The cost of carton or box for two dozen eggs should not be over eight cents. This makes a total of 17 cents as the cost of getting two dozen eggs from the producer to the consumer. If the eggs pass through the regular channels of country buyer, commission merchant and city retail dealer, there is a sum considerably in excess of this amount between producer and consumer. The farmer cannot get all of this difference but he can get a considerable share of it by using the parcel post.

Careful packing must be the rule in supplying a line of retail customers with eggs. If the customers chance to get a number of shipments that are broken, he is pretty sure to kick. Corrugated pasteboard makes the best material for one or two dozen size shipments. Each egg should be wrapped with fine excelsior or soft paper. Packing for parcel post shipment requires more time and this is perhaps the only thing against it, unless we may consider the slightly less expense of shipping by express.

There are several kind of containers suitable for small shipments on the market.

New Hamp.

C. H. CHESLEY.

## Crop and Market Notes.

### Michigan.

**Shiawassee Co., Nov. 15.**—Plenty of rain the past week. Farmers are fall plowing. About the average acreage of wheat and rye sown. The corn crop about the average. Potatoes are very poor, many farmers being compelled to buy for home use. A few lots of feeding cattle on hand. A large number of lambs coming in for winter feeding. Very few cars of cattle. Average number of hogs in the country. Plenty of feed in farmers' hands for home use. Wheat \$1.07; beans \$3.10; potatoes 75c; apples 80c per bu; milk \$1.45 per cwt.

**Washtenaw Co., Nov. 15.**—Acreage of wheat and rye sown is rather larger than other years. Farmers are now busy in the corn fields. Corn promises about 75 per cent of a normal crop. Potatoes practically a failure. A large number of carloads of potatoes already shipped in and sold to farmers and others. There seems to be a great abundance of feed for stock and a large amount of hay baled and shipped out at \$8@13 per ton. A good many hogs on feed, but not much other stock. Wheat \$1; corn 60c; beans \$3; hay \$12@13 for timothy; potatoes 80c; apples \$1; 3½ per cent milk \$1.70 per cwt.

### New York.

**Niagara Co., Nov. 16.**—Not so much wheat or rye sown as usual because of late work on the abundant peach crop. Potatoes only one-quarter of a (Continued on page 482).



## Feeding for Egg Production

AS the season for high-priced eggs approaches the problem of making the hens lay becomes a more difficult one. As this is a general difficulty, the high price of eggs indicating that but few hens are laying, it is evident that all poultrymen are wrestling with the same trouble. Here, then, is a great opportunity for the man who will give his birds the right sort of treatment. High prices, and few seemingly able to make their hens lay in winter. Of course, it must be admitted that heredity has something to do with winter production, also, if the flock is composed of pullets, the chicks must have been hatched at about the right time. Even with these conditions met there must be intelligent feeding and treatment if we would get eggs.

### Making the Hens Lay.

One year ago the writer purchased a flock of hens the first of December, a motley-appearing lot, half-moulted and varying in age from one to five years. "I never get any eggs in the winter," said the owner, "so I might as well sell out." We purchased them cheap with the idea of fattening for market, but what was our surprise to find almost all of them laying after three or four weeks, and we were simply trying to get them into condition that we might pick out a few for breeders, as they were pure-bred stock of various kinds. It is true that we gave them good quarters, something they had not been accustomed to, and a ration calculated to help them finish the moult and get into laying condition. Out of sixty birds we killed three that did not show up well and this was a flock that "had never laid in the winter."

There are a few common-sense things to be borne in mind when feeding for egg production. A good hen will lay four or five times her weight in eggs. The smaller breeds will beat this during the year. It takes quite a machine to stand such a strain. This should teach one that what the hen needs is something to help her make these eggs. Three kinds of constituents enter into the egg in relatively large quantities. These are mineral matter, nitrogenous matter and carbohydrates, all of which are present in corn and other grains. This does not prove, however, that grains are all the hen needs, but it does prove that she must have what she needs of the cereals. Experimenters have given us several combinations of these grains that are calculated to produce eggs. In our own experience we have found that the principal thing to avoid is the feeding of too much corn, as it is more fattening than other grains. Even then the Rhode Island Red will stand more corn than the Plymouth Rock. Corn is usually the most abundant grain on the farm and there is often a temptation to feed it to the hens when oats and wheat would be better. The best way to feed the grains is to make up a combination to serve as scratch feed and another to serve as dry mash. In this way there is no possibility of feeding the birds too largely of one.

### Necessary Feeds for Egg Production.

The poultryman should learn his most valuable lesson from nature. Hens lay in the spring, and on the farm—when the birds are allowed to roam at will—it is an easy matter to get eggs all through the summer season. The reason for this is not far to seek. They get an abundant supply of green material and animal food in the shape of insects and worms. Here, then, we find two other classes of material that are necessary to egg production. The needed animal food can best be supplied in the form of fresh beef scrap mixed with the dry mash during the winter. The green material must not be forgotten. To the

writer it seems the most important consideration. We never knew a hen to lay many eggs without it. Various materials and ways of supplying green feed have been described in this column. It matters little what it is but it is important that there be enough of it.

One other factor enters into winter egg production. The spring and summer laying hen is an active one. She must be active in the winter as well. We like to get the hens off the roost at the first peep of dawn. This is done by scattering the scratch feed after they go to roost. Then we scatter only a small quantity at a time. The birds must be made to work for their living. The lazy hen is always a drone. Better serve her in a fricassee. To sum up: take note of the spring ration of the hen and feed her as nearly as possible in the same way. New Hamp. C. H. CHESLEY.

### THE WINTER CARE OF DUCKS.

Breeding ducks should be purchased soon. These queer fowl do not take kindly to breaking up of family relations near the breeding season. With the Pekins we keep one drake for every five ducks. We have a pen for the breeding ducks away from the house and other poultry buildings, and before cold weather sets in we train them to roots inside. They become accustomed to being shut in at night and when the laying season comes they do not mind confinement at night and we are sure of their eggs.

Ducks thrive best when they have a house and yard to themselves. Two varieties of ducks will seldom do well together. Never feed them from the house and there will be no trouble with their staying too close about the house and giving vexation with their noise and mussy habits.

A building for ducks need not be constructed for warmth. Ducks can stand a great deal of cold on account of being so well protected by their feathers; but the fact should be emphasized that the dryer duck houses and pens are kept the better these fowls thrive. The roof of their home should be watertight and the floor such as will not become damp during wet weather. A good, well littered floor is important with ducks because they sleep on the floor, and always drop their eggs on the floor.

Duck raising is an ideal occupation for a boy or girl on the farm, who wishes to start in an interesting and profitable branch of poultry raising and one not difficult to manage. And we recommend duck raising to farmers' wives who do not have the time and strength to give to turkey rearing. Ducks grow rapidly and are soon ready for market. Overfeeding and dampness are the only things that induce disease and these are easily avoided.

Four ducks and a drake are enough to begin with. Even two ducks and a drake give a very good start. Males should not be closely related to the females.

Old ducks lay a greater number of larger, more fertile eggs than young birds. Ducks do not need as much room as geese and can be kept in larger flocks than geese. Water to swim in is not as essential for ducks as for geese. Ducks get along very well without swimming water, providing they have plenty to drink. Indiana. FRANCES WOOD.

A ton of fresh hen manure should contain about 22 lbs. of nitrogen, 20 lbs. of phosphoric acid and 10 lbs. of potash as a general average. When air-dry, hen manure should contain about 40 lbs. of nitrogen, 40 lbs. of phosphoric acid and 20 lbs. of potash to the ton.

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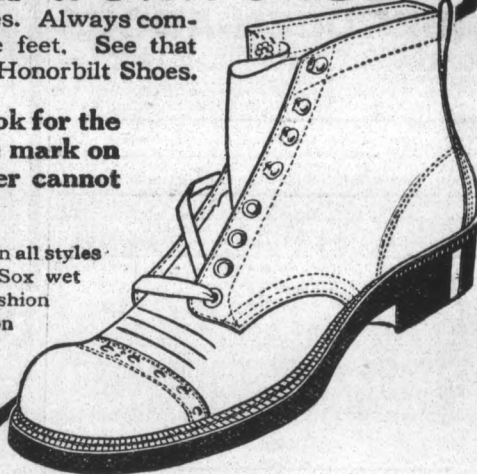
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Address J. K. Blatchford, Auditorium Tower, Chicago, Ill.

\$75 Buys registered Holstein Bull, Blumfield Korndyke Johanna No. 147708. 14 mo. old. Evenly marked. B. B. REAVEY, Akron, Mich.

## HATCH HERD

## YPSILANTI, MICHIGAN

Registered Holstein-Friesian sires, grandson's of World's greatest dairy sire, out of choice A. R. O. dams and King Pontiac Jewel Korndyke; Brother of K. F. Pontiac Lass 41.5; average record of 50 dams in his pedigree 31.25 in 7 days; average per cent of fat three nearest dams 4.37; of his own dam 4.33. Sires in first three generations already have over 600 A. R. O. daughters. A few females bred to "King". Prices reasonable.

## CLUNY STOCK FARM

## 100 Registered Holsteins 100

For Sale: A yearling son of Colantha Pieterje Sir Aggie, No. 82,392, from an A. R. O. dam—Ready for light service. Also some splendid individuals 10 mo. old, grandsons of Colantha Johanna Lad. All dams have excellent A. R. O. milk and butter records. If in need of a young sire, write for Pedigrees and Prices.

R. B. McPherson Howell, Mich.

A 14 MO. OLD BULL from a grandson of Pontiac Korndyke and a 20 lb., two year old, whose dam is 27 lb. cow, nicely marked and a beauty. Price \$200. Guy Wakefield, Fowlerville, Michigan.

## 28 Reg. Holstein Bulls at Auction

Wed. December 1st, at 10 A. M.

Consisting of fresh cows, cows soon to freshen, 2 yr. old, yearling and heifer calves; one herd bull Bell Boy Pontiac Korndyke No. 8460, sire Ypsilanti Sir Korndyke De Kol, dam a 21 lb. 3 yr. old Granddaughter of Hengerveld De Kol; 5 bull calves by the above bull. 12 are bred to King Zerna Alcartra Pontiac a good son of the 350,000 bull. I am not located in Holstein community and don't expect fancy prices. Tuberculin tested and free from contagious abortion. On my farm located 18 miles N. W. of Kalamazoo, 3 1/2 miles from Kendall.

C. H. GIDDINGS, Prop., Gobleville, Michigan.

## FOR SALE

Registered Holstein bulls ready for service; and registered Holstein bull calves, the best breeding in the world, grandsons of Grace Payne 2nd's Homestead, Pontiac Korndyke, King Faye Segis and Hengerveld De Kol. The dams of these bulls and calves, have large advanced registry records. For prices, write Callam Stock Farm, 204 Bearinger Bldg., Saginaw, Mich.

## Choice Holstein Bull Calves

Ready for service, Champion Parentage.

HILLCREST FARM - Kalamazoo, Mich.

## FOR SALE Registered Holstein Bulls

ready for service, and bull calves, also females. FREEMAN J. FISHBECK, Howell, Michigan.

## Reg. Holstein Friesian Bull Calves

From heavy producing dams. Bargain prices. DEWEY C. PIERSON, Hadley, Michigan.

HOLSTEIN CATTLE and Duroc Jersey Swine. Choice pigs of both sexes now ready to ship. Prices reasonable. E. R. CORNELL, Powell, Michigan.

Purebred Holsteins Young bulls of best individuality and breeding at reasonable prices. Write us G. L. SPILLANE & SON, R. D. 7, Flint, Mich.

Choice Holstein Bulls. All from A. R. O. Dams. Semi-off-yearling records 720 lbs. butter in Jr. 4 yr. old class to over 1000 lbs. in mature class. Breeding: Cross "King of the Pontiacs" and the "Demick blood." "Cherry Creek Stock Farm, Billiards, Mich. M. E. Parmelee, Proprietor.

HOLSTEIN Bull one year old. Sire, D. A. Aitken's Maple Crest Korndyke Hengerveld. Dam 23.73 Butte. Dam of 28.73 Butter 2 year old daughter. John A. Ritter, Warren, Mich.

Registered Holstein BULL CALVES 2 to 8 mo. old from heavy producing dams. Fred J. Lange, Sebawaing, Mich.

FOR SALE—3 Registered Holstein heifers 3 to 9 months old, two thirds white, good breeding. Price \$325.00. M. Baumann, Remus, Mich.

MAPLE Lane R. of M. Jersey Herd. Tuberculin tested by the U. S. Government. For sale R. of M. cows, bull calves and heifer calves from R. of M. dams and grand dams and Hood Farm Sire.

IRVIN FOX, Allegan, Michigan.

THE WILDWOOD Jersey Herd. Registered Jersey Cattle of Quality. Herd headed by Majesty's Wonder 90717, one of the best sons of Royal Majesty. The daughters of Majesty's Wonder are mated to a son of Majesty's Oxford King. Herd tuberculin tested. We have for sale a few choice young bulls for fall service from high producing cows. Alvin Balden, Capac, Mich.

Dairymen!  
—The Truth

You may be prejudiced against the Jersey because you don't know her. Look her up. She's the Money Cow.

Get This Book—a history of the breed and full of very interesting tests and facts. It proves conclusively that for pure dairy type, economy of production, richness of milk, long life and adaptability to feeds and climates—all these combined—the stands way above them all. This book "About Jersey Cattle" is free. Get your copy now. You'll find it mighty good reading.

The American Jersey Cattle Club  
346 West 23rd Street, New York City

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

Jerseys. Bulls ready for service, extra quality sired by Jacoba's Fairy Emanon. No. 10711, from high producing dams. SMITH & PARKER, Howell, Mich.

Jersey Bulls for Sale from high-producing dams, with testing Assoc. records, also on semi-official test. C. B. Wehner, R. 6, Allegan, Mich.

HILLSIDE Farm Jerseys, yearling bulls, solid color, half brothers to ex-world's-record senior 2yr old and from R. of M. dams, with records from 400 lbs. to 800 lbs. C. and O. DEAKE, Ypsilanti, Michigan.

Now Is Your Chance. JERSEYS—We are overstocked. Have got to sell. Reg. of Merit Stock. Cows, Heifers, Heifer calves—Bulls. Waterman & Waterman, Ann Arbor, Mich.

MILKING SHORTHORNS. Bull 10 months old \$125.00, 7 months \$100.00, 2 cows, DAVIDSON & HALL, Tecumseh, Michigan.

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

## BIDWELL SHORTHORNS

For: "B. f and Milk"

Registered Bulls, Cows and heifers, Scotch-topped roans, and reds for sale. Farm at N. Y. Central Depot, also D. T. & I. R. Y. BIDWELL STOCK FARM Box B, Tecumseh, Mich.

Shorthorns For Sale 8 young bulls also female, farm 1/2 mile east of Davis crossing on A. A. R. R. W. B. McQUILLAN, Howell, Mich.

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

Dairy Bred Shorthorns of best Bates Strains. Young bulls 7 months old for sale. Price \$100 each. J. B. HUMMEL, Mason, Mich.

Shorthorn and Pol'd Durhams for sale. Have white. C. CARLSON, Le Roy, Michigan.

For Sale—Full blood Brown Swiss Bull calf, 9 months old. A good one at a bargain if taken at once. Walter Frederick, R. No. 10, St. Johns, Mich.

Bulls For Sale. Red and Roan—Also two heifers. JAMES NEAD, SUNFIELD, MICHIGAN.

## HOGS.

Durocs & Victorias—Grand bunch of Glitz due March and April. Comprising the blood of Superba, Defender, Much Col., Orions and others. A few young boars. M. T. STORY, Lowell, Mich.

BERKSHIRES Two Spring Boars left. A choice lot of fall gilts for sale. A. A. Pattullo, R. No. 4, Deckerville, Mich.

Berkshires—sons, daughters, grandsons, granddaughters of such noted boars as Rival's Champion, Baron Duke 170th, Symbelee's Star 2nd, Grand Champion breeding at farmers prices. T. V. Hicks, R. 1, Battle Creek, Mich.

Royalton Bred Berkshires—April boar well marked, Royalton Emperor. Both registered with papers at fair price. Write to D. F. Valentine, Supt., Temperance, Mich.

Berkshires. Of various ages, either sex, open or bred, price. Elmhurst Stock Farm, Almont, Michigan.

## SWIGARTDALE BERKSHIRES

Are the kind that win at the fairs and also produce the litters as all of our show stock are regular breeders. They have the size with the bone to carry them and their breeding is unsurpassed. All the leading families are represented. We have a few choice Spring Boars now crowding the 300 lb. mark, for sale, prices from \$20 up. We are now booking orders for fall pigs for January delivery. Can furnish choice Trios not akin, for \$45 to \$50. We guarantee satisfaction.

Swigartdale Farm, Petersburg, Mich.

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

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

MAPLE PLACE FARMS. "Anything you want in Berkshires. Breeding and type perfect. And boar by Rivals Champion, cheap. C. S. Bartlett, Pontiac, Mich.

DUROC JERSEYS—A few choice spring BOARS ready to ship. Carey U. Edmonds, Hastings, Mich.

Duroc Jersey—March pigs either sex, also am booking orders for fall pigs for Nov. shipment. Inspection invited. E. D. Heydenberk, Wayland, Mich.

Capitol Herd Duroc Jersey Swine. Established 1888. Spring pigs for sale, satisfaction guaranteed. Express prepaid. J. H. Banghart, East Lansing, Mich.

Duroc Jerseys—Big Type, Heavy Boned Boars, ready for service, real herd headers sired by Volunteer Grand Champion, F. J. Dredt, R. 1, Monroe, Mich.

Durocs of the best of breeding. April farrow either sex or pairs for next 30 days \$20 each. Two fall boars. Oct. farrow \$30 each. Also Holstein bull one year Oct. 6. H. G. KEESLER, Cassopolis, Mich.

DUROC JERSEY BOARS A choice lot of spring boars, not akin. W. C. TAYLOR, Milan, Michigan.

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

J. W. KEENEY, Erie, Mich. Breeder of Duroc Swine. D. M. & T. local from Monroe or Toledo, Keeney Stop.

DUROC Jersey, Mar. & Sept. pigs either sex sired by a son of Volunteer. And two Holstein bull calves and 2 Holstein cows. E. H. Morris, Monroe, Mich.

Big Heavy Boned Duroc Jerseys for sale of all ages. Write your wants. M. A. BRAY, Okemos, Ingham Co., Michigan.

For Sale. Registered Duroc Brood Sows at farmer's prices. E. J. ALDRICH, R. No. 1, Tekonsha, Michigan.

Breeders' Directory—Continued on page 487.



## Practical Science.

### FACTORS IN THE DEVELOPMENT OF DAIRY COWS.

BY FLOYD W. ROBISON.

It has been popularly considered that the ration, more than any other factor, influences the growth and dairy qualities of a cow. It would seem that there is a very close relationship existing between ration and growth, and reasoning a priori would connect likewise the feed with the dairy quality as evidenced in milk production. We know as a matter of fact, that such relationship does exist but the information available from a scientific point of view upon these points has been very meagre indeed, although quite numerous have been the attempts to determine the influence.

#### The Missouri Investigation.

The Missouri Experiment Station in Bulletin No. 135 presents the results of a series of investigations on these points, covering a period of eight years. We like to encourage our readers to read these experiments as reported in full, for much information is obtained from an examination of the records which cannot be shown in the summary. At the same time they gain a better appreciation of the tremendous amount of work involved in an investigation. A few words or a few paragraphs may report in a concise way the results of years of experimentation and yet it is only through the medium of this long time effort that it is possible to get the information together which is desired. In the summary and conclusions of the results of this investigation the result is reached in an apparently conclusive manner.

1. "One cause of small cows in commercial herds is the character of the ration during the growing period."

2. As might be expected, "The strongest factors tending to stunt the size of cows is scanty feeding during the growing period, combined with early breeding."

3. A full ration in comparison with a scanty ration has the effect of maturing dairy stock sexually at an age of from two to four months earlier than on the scanty, light ration, a result reached in another way and exhibiting itself through a stunted growth.

4. "The factors which are the result of heredity, such as the influence of the sire, individuality of the animal, are the real determining factors with reference to the milking functions of the cow. Inferior milk producing cows are due mainly to inheritance rather than to treatment received when young."

5. "The highest milk production on the average, is secured from cows well matured before the lactation period begins. The highest production among 95 cows of record was found to be from those giving milk for the first time, between the ages of 28 to 32 months; the lowest production for those yielding milk for the first time, under 20 months."

6. "Heavy feeding when young tends to develop coarser stock, although somewhat larger. This difference, however, is not a permanent one."

7. "The opinion of breeders that heifers raised largely on roughage have a greater capacity for handling feed when mature, was not substantiated."

#### General Conclusion.

"It is possible to influence the rate of growth, size when matured and type, to some extent by the liberality of the ration during the growth period and the age at first calving. Within limits of variation, even far beyond the normal, the character of the ration with reference to the amount of nutrients supplied does not exert any appreciable effect upon the milking functions of the cow when mature." "The age at first calving is a factor of some importance with reference to development of the milking function of the cow. Calving at an extremely early age is detrimental to the best development of the milking function while nothing is gained by two great delay."



**For Stock and Poultry**

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One for every curable ailment

**Cure cuts this convenient way**

Thousands of barb wire cuts, harness sores and other wounds on stock are healed annually by

### Dr. LeGear's Antiseptic Healing Powder

A powerful healing antiseptic in a sifter top can; most easily applied remedy known. Just dust the wound with enough powder to cover it—forms an antiseptic coating that soothes, heals, and protects the wound from insects and infection. In use twenty years. You'll be enthusiastic when you try it. Very inexpensive. Get a trial can now—you're always needing such a remedy. Ask your dealer.

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If your dealer cannot supply you with Dr. LeGear's Antiseptic Healing Powder, tell us his name and we'll send you, free, a liberal trial can. Write for it now.

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**50c stock book free** by Dr. LeGear. 116 pages, 65 pictures; on ailments, treatment and care of stock and poultry. Write for it.

### WANTED—Honest, Energetic Men

In every county to sell our big line of goods direct to farmers. EXPERIENCE NOT NECESSARY. We fully instruct you. Farmers, laborers, mechanics, or any men willing to work can make

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handling our big sellers. Exclusive territory given. We furnish you the capital. You furnish the team to carry the goods. Be your own boss in a pleasant, permanent and profitable business. Write at once for full particulars, giving age and occupation.

#### THE DUOFORM COMPANY,

North Java, N. Y.



**As low as \$7.90**

**\$10,000.00**

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**Hertzler & Zook SAW**

This is the cheapest saw made. Only \$7.90 saw frame to which a ripping table can be added. Guaranteed 1 year, money refunded and all charges paid if not satisfactory. Write for catalog.

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**KEEP the TOLL YOURSELF**

Use the time for the drive to mill in grinding feed and corn meal. One horse can do it. We guarantee capacity, material and workmanship in Star Sweep Grinders. Big returns from little investment. Ear corn and small grains ground. Saves you money. Free catalog. Write Star Mfg. Co. 11 Depot Street, New Lexington, Ohio.

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1 1/4 in. Team Harness, Less Collars - \$25.00.  
1 1/4 in. Team Harness, Less Collars - \$30.00.  
1 1/4 in. Team Harness, Less Collars - \$35.00.  
1 1/4 in. Traces, per set, (4) \$6.95. 1 1/4 in. Traces, set \$7.95.  
1 in. Team Lines \$3.00. 1 1/4 in. Team Lines \$3.75.  
A Trail order will make you a permanent customer. Watch our ad. for specials in Harness. (These Prices are good for 10 days only.)

#### TRENTON HARNESS CO.

Box 123,

Trenton, Michigan.

**BOWSER SWEEP MILLS**

Different from all others. 4 or 2 horses. Grind Corn with shucks and all small grains. (Also make 10 sizes of belt mills) FREE—Folder on "Feeds and Manures" D. N. P. Bowser Co., South Bend, Ind.

#### BREEDERS' DIRECTORY.

(Continued from page 486.)

**HAMPSHIRE SWINE.** A few choice March and April boars. Also two good yearling boars. Yearling and Spring Gilts sold open or booked, to be bred for March or April farrows. Fall pigs single, pairs or trios not akin. Price to sell. Write me your wants. Floyd Myers, R. 9, Decatur, Ind.

**Hampshire Hog**—the belted beauties. One yearling boar and spring pigs, either sex. Write your wants. John W. Snyder, St. Johns, Mich., R. No. 4.

**Chester Whites**—Special prices on March boars for next 30 days. Fall Pigs. F. W. ALEXANDER, Vassar, Michigan.

**CHESTER WHITES**—The long type, prolific kind. Meadow View Stock Farm, R. 5, Holland, Michigan.

**Registered** Chester White males and females. Reg. Holstein male calves, herd bull and cows. Farham's Pedigree Stock Farm, Bronson, Mich.

**PRIVATE SALE.** Entire herd of thoroughbred Boars, Champion and Grand Champion, at live pork prices. Bonnie Brae Farm, Algonac, Mich.

**O. I. C. SWINE**—Are you on the market for a choice bred sow to farrow the last of Aug. or fore part of Sept.? If you are, write me. I have them. A. J. GORDEN, R. No. 2, Dor, Michigan.

**O. I. C.** Serviceable boars, choice Gilts not bred, Spring pigs not akin, also Toulouse Geese. Write for low prices and photo. Alvin V. Hatt, Grass Lake, Mich.

**O. I. C. GILT BRED SPRING PIGS** ready to ship. H. J. FERLEY, Holt, Michigan.

**O. I. C's**—Bred sows, bred gilts, spring pigs both sex. Service Boars. Price low. A. R. GRAHAM, Flint, Michigan.

**REGISTERED O. I. C. BOARS & GILTS** High class fall pigs at reasonable prices. J. CARL JEWETT, Mason, Mich.

**O. I. C.** SPRING BOARS of good type and Red Polled bull calves. John Berner and Son, Grand Ledge, Mich.

**O. I. C.** SERVICEABLE BOARS. Priced to sell, and recorded in buyer's name. H. W. MANN, Dansville, Michigan.

**O. I. C's STRICTLY BIG TYPE.** March, April and May pigs Sired by Leighty Prince, White Monarch and Frost's Choice, all big type boars and sows weighing from 500 to 700 lbs. with quality second to none. Can furnish in pairs not akin. Prices reasonable. Newman's Stock Farm, Mariette, Mich. R. 1.

**O. I. C's** two yearling boars and a lot of last Spring pigs not akin. Also a lot of this fall pigs at \$10 each at 8 to 10 weeks old. Good stock. 3/4 mile west of depot. Otto B. Schulze, Nashville, Mich. Citizens phone 124.

**POLAND-CHINAS** From our thousand pound Grand Champion Boar and Big Stretchy Sows, of best breeding. Spring Boars at a bargain. Hillcrest Farm, Kalamazoo, Mich.

**O. I. C's.** Spring Boars ready for fall service. Write JULIAN P. CLAXTON, Flint, Michigan, R. 8.

**O. I. C. SERVICEABLE BOARS** From best of stock. Priced to sell. Reg. free. E. B. MILETT, Fowlerville, Michigan.

**O. I. C's** Serviceable boars, summer and fall pigs. I pay express. G. P. ANDREWS, Dansville, Michigan.

**O. I. C.** Choice 18 mos. old boar. Grand Champ. at West Mich. State Fair 1915 also Mar. and Apr. gilts. A. J. BARKER, BELMONT, MICH. R. No. 16.

**O. I. C. and CHESTER WHITE SWINE.** Boars that have not been beat at the big state fairs this fall. We also have the unbeaten, young herd of Six State fairs, choice boars and gilts for sale, any age. Rolling View Stock Farms, Cass City, Mich.

**O. I. C's** One March and one April Boar. Spring Gilts, June and July Pigs, either sex. C. J. Thompson, Rockford, Mich.

**Registered O. I. C's.** Attractive prices on fall pigs and last spring gilts. All from large litters. Elmer E. Smith, Bedford, Mich.

**For Sale.** Pedigreed O. I. C. pigs. Weight from 60 to 100 pounds. \$12 for males and \$14 for sows. Order direct from this advertisement. Satisfaction guaranteed. F. W. Mackinder, Harrisville, Mich.

**Way Brothers Stock Farm.** The home of the big bred O. I. C. Hogs. Cockerels, Stock for sale. Registered free. J. R. Way, Pompeii, Mich.

**BIG TYPE P. C.** Either sex, pairs or trios not akin. Bred sows and gilts. Have several 1000 lb. boar prospects. Absolutely no inbreeding. Everything guaranteed right. FRANK KRUGER, Ravenna, Mich.

**Big Type** POLAND CHINA all ages. Herd boar Bargains in spring boars. Satisfaction guaranteed. G. W. Holton, R. 11, Kalamazoo, Mich.

**POLAND CHINAS** of the big type. Boars ready for service. Barred Rock Cockerels. A. A. WOOD & SON, Saline, Michigan.

**Large Strain P. C.** two extra good Summer Yearling Boars. Bred gilts are all sold. Spring pigs that are beauties, sired by Big Defender, the boar that everybody goes wild over. Come and see him. H. O. SWARTZ, Schoolcraft, Mich.

**Large Type P. C.** Largest in Mich. Boar pigs ready for service. Good enough to go anywhere. First order gets first choice. Priced to sell. Sired by two largest boars in State. Free Livery to visitors. W. E. LIVINGSTON, PARMA, MICH.

**LARGE TYPE P. C.** Some very choice April and May Boars for sale. Brood Sow Sale in February. W. J. HAGELSHAW, Augusta, Mich.

**BIG Type** Poland Chinas, boars as big as good as grow in Iowa with quality to please you. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

**Heavy BONED POLAND CHINA** Spring Boars and gilts not akin. Also older stock. Prices right. CLYDE FISHER, St. Louis, Mich.

**Spring Pigs at Half Price:**—Bred from the largest strain of Poland Chinas on earth, none bigger. If you ever expect to own a registered Poland China, this is your opportunity. Get busy and order at once. Pairs and trios not akin \$15 each. A few bred sows at \$25. J. C. BUTLER, Portland, Mich. Bell Phone.

**Big Type Poland China**—Western bred extra large boned. Stock for sale. Pairs not akin. Satisfaction guaranteed. W. BREWBAKER & SONS, Elsie, Mich. R. No. 5.

**POLAND CHINA** Spring Pigs from heavy boned prolific stock. Also, Oxford Sheep, both sex at bargain prices. ROBERT NEVE, Pierson, Michigan.

**Poland Chinas.** Spring Pigs either sex, both medium and big type from large litters. Prices right. L. W. Barnes & Son, Bryon, Michigan.

**25 BIG TYPE POLAND CHINA** boars sired by Big Smooth Jumbo 810 lbs. at 20 mos. and Giant Des Moines 743 lbs. at 17 mos. At farmers' prices. Sent C. O. D. Write or come and see 130 head of good big types. Wm. Waffle, Coldwater, Michigan.

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

**A. G. Meade,** Stanton, Mich. Colby's Ranch, has for sale 100 head of Registered Poland China Boars and Sows. Prices reasonable.

**50 YORKSHIRES**—All ages. Red Polled Cattle, Oxford Down Sheep, W. P. Rocks, I. R. Ducks, E. S. CARR, Homer, Mich.

## REGISTERED YORKSHIRES

Imported Strain. Both sexes. Prices Reasonable. Hatch Herd, Ypsilanti, Michigan.

**Large Yorkshires** Gilts bred for October farrow. Serviceable boars. Pigs all ages. Prices reasonable. W. C. Cook, Route 42, Ada, Michigan.

**Yorkshire Service Boars**—Also sows and fall pigs, pairs not akin. No Cholora. Send for Photos. CHAS. METZ, Ewart, Mich.

**Mulefoot Hogs**—Weaning Pigs, Brood Sows and Gilts. Young service Boars. Pairs not akin. Write for prices. C. F. Bacon, R. 3 Britton, Mich.

**MULE FOOT HOGS REGISTERED** 2 very large boars right. LONG BEACH FARM, Augusta, Mich.

#### SHEEP.

**IT PAYS TO BUY PURE BRED SHEEP OF PARSONS** "The Shepherds of the East" I sell and ship everywhere and pay express charges. I will start one man in each township. Write for club offer and descriptive price list. Oxford, Shropshire, Ram-boulets and Polled-Delaines.

**Parsons Pure Bred Sheep**

PARSONS, Grand Ledge, Michigan R 1

**Oxford Down Sheep.** Good Yearling Field Rams and ewes of all ages for sale. M. F. GANSSLEY, Lennon, Michigan.

**Oxford Down Sheep and Polled Durham Cattle** For Sale. J. A. DeGarmo, R. No. 25, Muir, Mich.

**OXFORDS**—I will sell a few ewes or ewe lambs O. M. YORK, MILLINGTON, MICHIGAN.

**For Sale.** A registered Oxford Down Ram, Ram Lambs \$10 each. Also a few ewe lambs. Registered Berkshires both sex. Chase's Stock Farm, R. 1, Mariette, Mich.

**Registered Oxford Down Sheep.** Ram Lambs. Yearling Ewes. L. N. OLMSTED, J. SPAANS, MUIR, MICH.

**Shropshires Ewes and Ram Lambs for Sale.** DAN BOOHER, R. 4, Ewart, Michigan.

**Big Robust Wool-Mutton Shropshire Rams** Priced right and satisfaction guaranteed or money back. Write today for Special Price List 24. A. H. FOSTER, Allegan, Michigan.

**Start the Boy** Shropshire and Oxford ewes bred to imported rams. KOPE KON FARM, Kinderhook, Michigan.

**Merinos and Delaines**—Large, choicely bred, long staple, oily, heavy shearers. Delivered, priced to sell. S. H. Sanders, Ashtabula, Ohio.

**LINCOLNS RAMS and EWES** from the unbeaten Cotswolds, Leicester and Dorset. These sheep have been shown at the biggest state fairs in the country and some have never been beaten. HARRY T. CRANDELL, Cass City, Mich.

#### HORSES

**LOESER BROS.** We have 100 head of Belgian and Percheron Stallions and mares. Imported and home bred. We have sold pure bred horses in Michigan for the last 25 years, and have the right kind, and at the right price. We can supply any number of work horses, both geldings and mares. Get in touch with us.

**LIGONIER, INDIANA.**

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

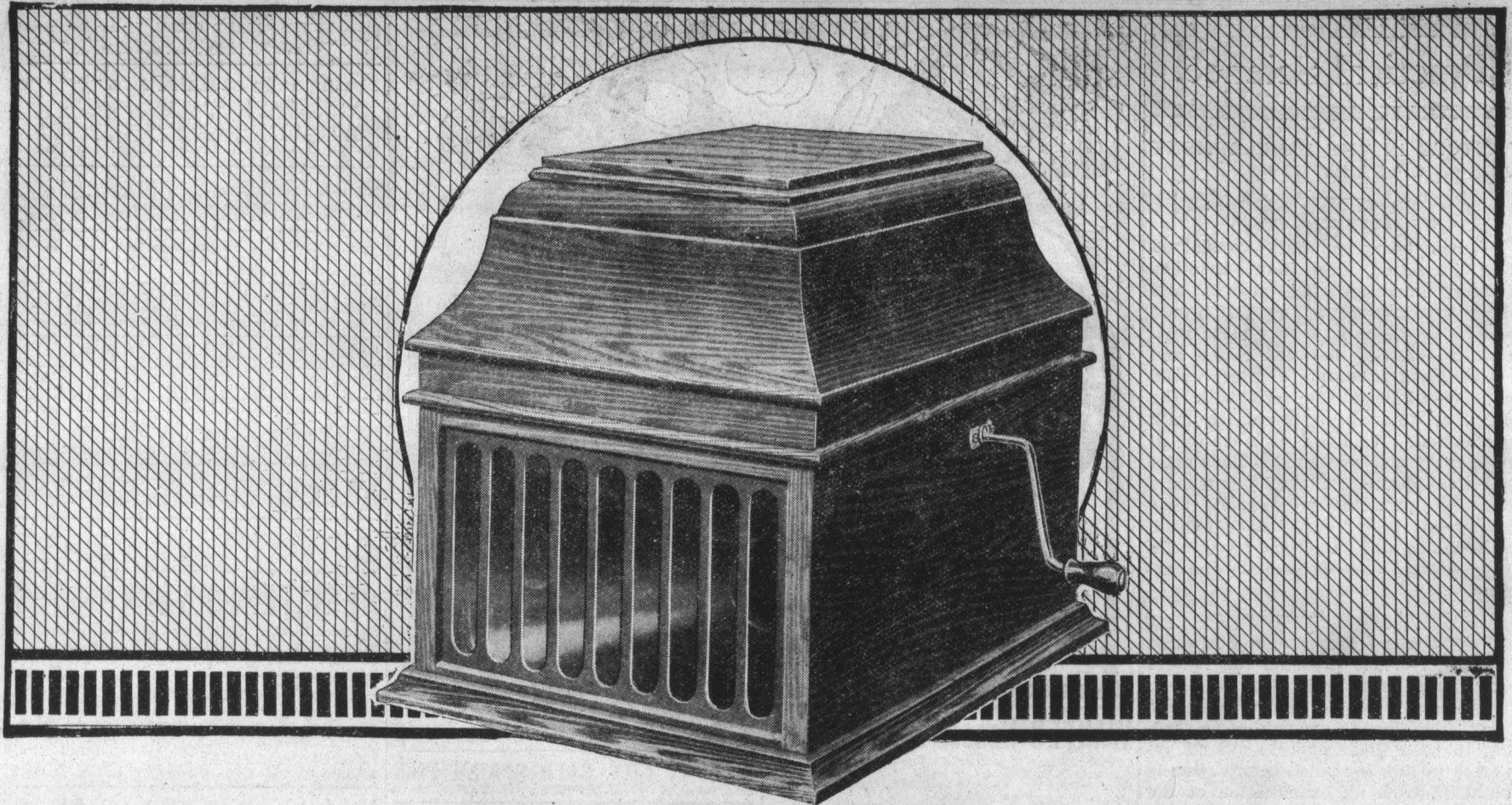
**Registered Percherons** Brood mares, Fillies and Young Stallions. Priced to sell. Inspection invited. L. C. HUNT & CO., Easton Rapids, Michigan.

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

**Shetland Ponies**—All ages from \$50 to \$75. Fine specimens. Holstein Bull calves \$25 each. E. Brackett & Sons, Allegan, Michigan.

**One Percheron** STALLION of good breeding for sale. Cheap if taken at once. For particulars address: F. D. Nichols, Homer, Mich.





# Mr. Edison's Wonderful New Instrument **NEW!** Master Instrument Edison's Latest Invention

**Just Out!** The perfected musical wonder of the age. And shipped now on a stupendous special offer *direct from us*—Write for new catalog.

**WRITE** today for our *new* Edison catalog—the catalog that tells you all about the wonderful *new* model Edison with Mr. Edison's *new* diamond point reproducer—the new parlor grand style. It will also tell you about **our new Edison offer!** Now read:

## Free Loan—

We will send you the *new* model Edison Phonograph and your choice of all the brand new records on an **absolutely free loan**. We want you to hear all the waltzes, two steps, vaudevilles, minstrels, grand operas, the old sacred hymns, every kind of comic and popular music, also your choice of the highest grade concerts and operas, as rendered by the world's greatest artists. Entertain your family and friends. Give plays and concerts right in your own parlor. Hear the songs, solos, duets and quartettes, the pealing organs, the brass bands, the symphony orchestras, the choirs of Europe's great cathedrals, the piano and violin concerts, virtuoso—all these we want you to hear free as reproduced on the new Edison.

**Then, when you are through with the outfit, you may send it back at our expense.**

**Remember**, not a penny down—no deposit—no guarantee—no C.O.D. to us—no obligations to buy—a **full free trial** in your own home—*direct* from us—*direct* to you. Returnable at our expense or payable (if you want to keep it) at the actual rock-bottom price direct from us.

**The Reason:** Why should we make such an ultra-liberal offer? Why should we go to all this expense and trouble just so **you** can have all these free concerts? Well, we'll tell you: we are tremendously proud of this magnificent new instrument. When **you** get it in your town we **know** everybody will say that nothing like it has ever been heard—so wonderful, so grand, so beautiful, such a king of entertainers—so we are pretty sure that at least some one, if not you, then somebody else, will want to buy one of these **new style** Edisons, **especially as they are being offered now at the most astounding rock-bottom price and on easy terms as low as a few dollars a month.** But even if no one buys, there is no obligation and we'll be just as glad **anyway** that we sent you the **new** Edison on our **free trial**; for that is our way of advertising quickly everywhere the wonderful superiority of the **new** Edison.

### COUPON

**F. K. BABSON, Edison Phonograph Distributors**  
Dept. 4388, Edison Block, Chicago, Ill.

Gentlemen:—Please send me your New Edison Catalog and full particulars of your free trial offer on the new model Edison Phonographs.

Name \_\_\_\_\_

Address \_\_\_\_\_

## Our New Edison Catalog Sent Free

Your name and address on a postal or in a letter, (or just the coupon) is enough. No obligations in asking for the catalog. Get this offer—**while this offer lasts.** Fill out the coupon today.

**F. K. Babson, Edison Phonograph Distributor**  
4388 Edison Block, Chicago, Ill.

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355 Portage Ave., Winnipeg, Man.

## Mr. Edison's Pet and Hobby



among all his wonderful inventions is his phonograph. He worked for years striving to produce the most perfect phonograph. At last he has produced this new model. Think of it: over 25 years of work on all these epoch-making inventions—then his pet and hobby perfected!

## A Happy Home

Happiness is life—and real happiness is found only in a real home. And by a **real home** I do not mean a house with a yard or farm around it. Oh, no! A real home is the place where the happy and united family gather together for mutual enjoyment and recreation. And the Edison makes this possible, for it stands supreme as the greatest home entertainer. It will mean more than entertainment and merriment, more than an hour of amusement—yes, it will mean genuine pleasure of the lasting sort—helpful entertainment and culture of the most beneficial kind. It will mean the family united—a new home.



Such a variety of entertainment! Hear the latest up-to-date song hits of the big cities. Laugh until the tears stream down your face and your sides ache from laughing at the funniest of funny minstrel shows. Hear the grand old church hymns, the majestic choirs sing the famous anthems just as they sing them in the cathedrals of Europe. Hear the pealing organs, the crashing brass bands, the waltzes, the two-steps, the solos, duets and quartettes. You will sit awestricken at the wonderful grand operas as sung by the world's greatest singers. You will be moved by the tender, sweet harmony of quartettes singing those old melodies that you have heard all your life. Take your choice of any kind of entertainment. All will be yours with the Edison in your home. **Send the coupon today.**