

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL.
ESTABLISHED 1843.

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

VOL. CXLII, No. 4.
Whole Number 3767.

DETROIT, MICH., SATURDAY, JAN. 24, 1914.

50 CENTS A YEAR
\$2 FOR 5 YEARS.

WHEN the air is sharp and torments of flaky, white snow hide the gloomy skies and plants lie in their snug winter quarters dreaming their dreams of sunshine and June; then should the dairy cow be in an environment that harmonizes with her heredity. Time it is of work, of care and solicitude. These highly developed, artificial creatures are not dwelling in the land of their ancestors; when changed very far to different latitudes and conditions they can not seek their native forests, warm valleys, adjacent mountain slopes and tablelands where tender and nutritious herbs and grasses are abundant. Thus there is need of warm shelter, choice foods, kindness and care. The stable, the food and the handling educe the best that is in them.

In a comfortable stable, with plenty of light and ventilation and under the watchful eye of a kind master is a good place for the dairy cow to be during the winter. Choice, early-cut hay, fresh, succulent silage, clean and wholesome grain feeds and plenty of water and salt are the ingredients that make milk and healthy cows. Abundance, succulence and variety form the trinity of successful dairy feeding. Where these three are present we have healthy cows, abundant milk yields and strong, vigorous calves. We are feeding not for today's milk yields alone but for the growth and development of the calf that some day is to take the place of the cow. Men of vision prefer to allow the cow a period of rest so that she may build up her energies and bring a healthy, well-developed calf.

May the dairy cow be turned outside for water and exercise? She may, if the man who is caring for her knows his business. She may be left for an hour if the day is pleasant and the yard is sheltered from cold, chilling winds. The exercise and fresh air is beneficial and it is much easier to clean the stables and put the bedding in place than it is with the cows in their places. If the man who is caring for her is thoughtful he will not turn the whole herd out at one time when the yards are icy and slippery. And the cows will not be compelled to wade in the mud and manure walking from the stable to the watering tank and back again to the stable. Let the dairy cow outside to drink, walk about the yard and exercise if the day is pleasant, but never compel her to fill up with ice water and become chilled before returning to the stable.

Shall the grain rations be withheld from the dry cows? No, emphatically no. Feed two or three pounds of bone, blood and muscle-building grain feeds a day to the dry cow. A cow that is doing double duty needs good nourishing food. It is the little extra grain that goes to build up her energies and nourish the growing foetus. Plenty of good hay and silage will give her digestive organs the proper stimulus of distention and keep her bowels in a good laxative condition, but if she has to subsist on roughage alone she can not lay on flesh to be converted into milk after she freshens. Do not be afraid to have the cow in good condition at freshening time, for if she is a good cow, she will convert the flesh into milk during the next period of lactation. Many of the best feeders use considerable linseed oil meal in the rations for dry cows in order that they may take on flesh before freshening. Among the sensible and plausible reasons advanced for this practice is that by having considerable fat on her body the cow makes this fat into milk-fats after she freshens and gives an increased amount of butter-fat while being tested for a 30-day record. While the average dairy farmer can not afford such expensive methods of feeding his cows, yet the lesson is plain; the cow

Winter on the Dairy Farm.

By W. MILTON KELLY.

that is in a vigorous, flesh-gaining condition at freshening time will produce more milk during her lactation period than the one that is in a run-down, emaciated condition.

As calving time draws near, what can we do? We might have kept a record that would tell us within a few days when the calf should come. That is an easy matter in the dairy herd. If this has not been done, we can tell something of the approaching parturition by divers signs and appearances. We may remove

hand. Many a wise old dairyman will do the job more skillfully than a trained veterinarian. For three days after calving the cow should have the same kinds of food she had prior to parturition. As she regains her normal condition and her udder has been relieved by the calf sucking and skillful hand manipulation, more grain feed may be added to her ration until she reaches her maximum production about five weeks after calving. Do not give her too much concentrated feed. Make the ration rather bulky in the ear-

about one-half pound every other day, for a week, and then make no changes for a week. The next week her ration may safely be increased the same way. When she is making good use of this, give her a liberal quantity of bulky food, clover hay and silage. Continue in this way until she is brought up to about all the grain she can economically handle. The chief factor is to go slowly and never increase the feed too rapidly. In this way she may be brought up to maximum production without danger of injury.

The calf is an important figure in building up the dairy herd. At the beginning the tall, awkward, wobbly youngster is none too strongly linked to life. It is particularly susceptible to destructive germs lurking on filthy stable floors that may gain entrance to the system through the navel when it is innocently stretched to rest and grow. The stable floor should be disinfected and the navel cord covered with disinfectant powder three or four times before it heals. Many dairy experts tell us that the calf should never be allowed to suck the cow. Away with such nonsense. Under usual conditions leave the calf with its dam for the first three days, if the cow is large and likely to injure the calf, tie it where she can see it and allow it to nurse several times during the day. Nature has stored up in the udder of the cow a secretion called colostrum, which is intended to regulate the digestive organs of the calf in order that it may be well-started toward a thrifty, vigorous life. Now, if left with its mother for three days when it may take this nourishment right from its natural source it will have made a long stride toward a rugged and useful life.

Then comes the most critical time in the life of the calf, when we take upon ourselves its feed and care, and right here is where we must exercise a lot of patience and intelligence in our management of it. Coaxing a calf to drink is easier than pushing its head into a pail and holding it there. By wetting the fingers and coaxing its head into the pail it will soon learn to drink.

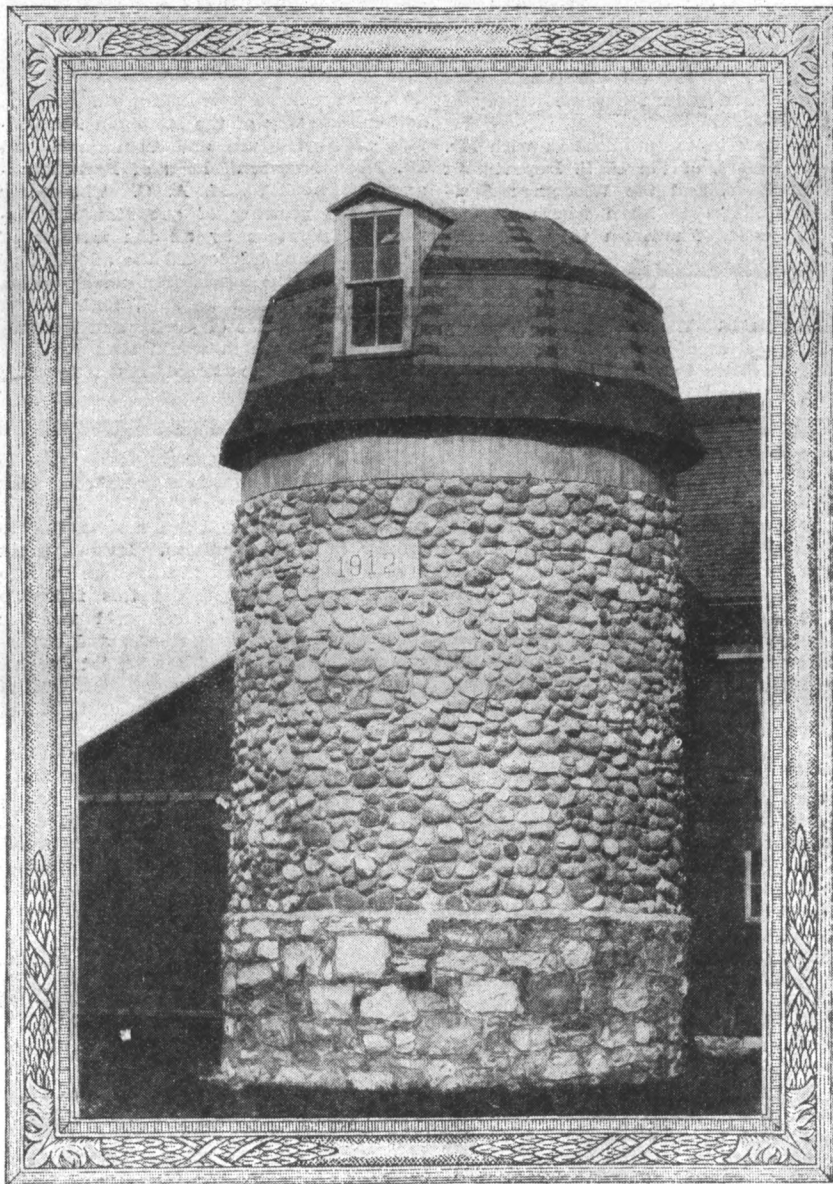
The three most essential things to observe in feeding calves are the amount of milk, the temperature and quality. At this age their little stomachs are tender and every precaution should be taken to keep them healthy. When possible it is best to feed skim-milk warm from the separator. Feed whole milk for a month at which age the calf will be able to make use of some grain feed; then substitute gradually skim-milk until the calf is old enough to handle the new ration to advantage. Some good calf feeders change the whole milk diet to one of skim-milk and grain when the calf is two weeks old, but if possible I think it pays to give it the best possible start.

Corn silage should be a predominating factor in the winter ration. There is nothing superior to water inclosed in plant cells to give the ration the consistency agreeable to the cow and best suited to promote her health and vigor. It is not the amount the cow eats and digests that wholly determines the returns from the feed she consumes, but the amount that is built into body tissues and made into milk.

Succulent feed gives just the right tone to the animal's digestive system to bring its efficiency up to the limit of profitable production. If therefore, one quality in feed is more important than another, it is that it should be palatable and juicy. It enables the cow to eat, digest and assimilate larger quantities of other feed. There is little danger of cows going off their feed when they are eating liberal quantities of silage with their grain feeds.

In the prevention of disease too much stress can not be put upon the importance of silage.

(Continued on page 87).



Silo Built by A. Wood, Ingham Co., an Ornamental but Expensive Type of Silo.

Silo extends 10 feet below ground adjacent to basement; inside dimensions 12x34 ft.; wall 14 and 18 inches thick, laid in cement with old lightening rod used as reinforcement every 2½ ft. in height, plastered inside; door frames of oak plank with gas pipe ladder; roof covered with asphalt shingles. Stone and cement were elevated a wheelbarrow load at a time with a gas engine.

the cow to a comfortable box stall and feed her plenty of hay, silage and wheat bran. The mother should be prepared for a safe and happy calving. Rarely are we called upon to assist the cow at her calving, still, we ought to be ready and willing, as there may be emergencies when we must do so or the cow and her calf will perish. After calving is safely accomplished the cow should be given plenty of warm water, some warm oats and choice hay. If the placenta does not come away within nine or ten hours after calving it should be removed by a skilled

lifer period of lactation, and make every effort to stimulate her milk flow.

It is better to bring the cow up to maximum production gradually. My practice is to give her a ration made up of wheat bran, ground oats and (old process) oil meal for the first week, as a mash or slop, using warm water and dividing it into three feeds; to give her all the warm water she will drink. For the first week treat her as a sick cow, and get her started properly. If at the end of the week she is taking four pounds of grain feed, increase it by the addition of

Increase Your Cream Separator Profits!



This shows the Stewart Speed Indicator installed on Cream Separator Crankshaft.

THOUSANDS of dairymen are getting 10% to 50% more cream by using the Stewart Speed Indicator on their cream separators. You can do the same. You are now losing all kinds of money by turning the crank of your separator at the wrong speed. The

Stewart Speed Indicator for Cream Separators

is an instrument that goes on the crankshaft of your separator. Its dial tells you when you are operating your separator exactly correct so as to get every bit of cream out of your milk.

Nobody can turn any separator at the right speed without the Stewart Speed Indicator. One dairyman with 20 cows lost \$524.10 in a year just because he guessed at the speed. Another, owning 8 cows lost \$18.50 in one month by guessing.

Fits any Separator—\$10 Complete

No matter what make your cream separator is, the Stewart Speed Indicator will fit it—and the price is only \$10 complete.

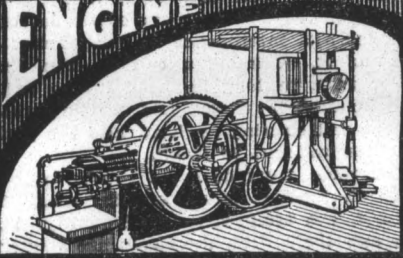
You can order one from any hardware dealer, or cream separator dealer, or, send to us direct.

Information and Butter Books—FREE

Fill out the coupon below and mail it to us. It will bring you this book that tells you how to get the cream profit that you are now losing every day.

Stewart-Warner Speedometer Corporation,
126 Diversey Blvd., Chicago, Ills.
Please send me, free, all your literature on
Cream Production and the book about the
Stewart Speed Indicator for Cream Separators.
My name is.....
My Address.....
State.....

Read my Book—See my Prices—Before you buy any ENGINE



This WITTE Engine, after 26 years, still giving good service to S. A. Stone, Chitticoke, Mo.

WITTE ENGINES

Kerosene, Gasoline & Gas

You can now own an Engine for less than you can do without one.

Look at These Prices!

2 H.P. \$39.45; 4 H.P. \$75.50; 6 H.P. \$99.35;

8 H.P. \$149.90; 11 H.P. \$218.90; 20 H.P. \$389.50

Other Sizes, up to 40 H.P. Proportionally Low.

Stationary, Portable, Skidded and Sawrig styles. Standard for 27 years. Why pay two prices for a good engine or take chances on a poor, or doubtful engine for any kind of a price, when the WITTE is so low priced and saves you all the risk.

60 DAYS' TRIAL; 5-YEAR GUARANTY

Easy terms of payment, at regular prices. You are sure of a square deal, when you buy of me.

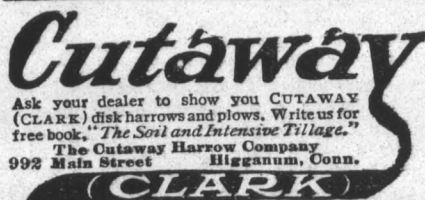
Book Free

Get my Book before you arrange to try any engine. Costs you nothing to be sure of your selection, even if you don't pick a WITTE. Learn the inside of the engine business and how to judge engines for yourself.

Send me just your address so I can send you my New Book with my Latest and Best Offer by return mail.

Ed. H. Witte Engine Works

2195 Oakland Ave., Kansas City, Mo.



Ask your dealer to show you CUTAWAY (CLARK) disk harrows and plows. Write us for free book, "The Soil and Intensive Tillage."

The Cutaway Harrow Company
992 Main Street Higganum, Conn.

Mention Mich. Farmer when writing to advertisers.

St. Clair Co. Potato Growers Organize.

AT a meeting of St. Clair county farmers held at the office of County Agriculturist Crandall on January 8, The St. Clair County Potato Association was formed and officers elected for the ensuing years as follows: President, Myron Mills, Marysville; vice-president, Fred Beach, Port Huron; secretary-treasurer, L. V. Crandall, Port Huron.

The interest shown in the potato growing future of the county was very gratifying, 128 farmers being present at the meeting.

Daniel Foley, president of the St. Clair County Farm Bureau, presided and after a few remarks called on County Agriculturist Crandall to explain the object of the meeting. Mr. Crandall stated that at the first meeting of men interested in potato culture, held in his office on December 13, men from seven townships were present and after an informal discussion it was decided to call another meeting. The object in calling this meeting was to learn if the farmers wanted to organize a potato association, and the result was most gratifying. Referring to reasons for such an organization he said in part: "Every year the south comes north to buy their seed potatoes for the following year. Do you know where they go for this seed? Why, to Wisconsin or Minnesota because they are sure of getting the quality and quantity they desire. The farmers of Wisconsin and Minnesota are organized into potato clubs and are therefore in a position to sell a large quantity of potatoes which they will guarantee.

"We not only want a market in Port Huron for our potatoes but we want to dispose of them outside of the state and in order to do this we must standardize this crop by having all the members of the association grow the same variety of potato.

"I am now in communication with Mr. William Stuart, of the U. S. Department of Agriculture, and the Wisconsin Agricultural College, to learn where we can purchase seed of uniform type and reasonably free from disease.

"We should study the diseases of potatoes in St. Clair county and the control of insect pests. We can best do this by holding a series of meetings and inviting outside speakers to address us.

"The growing of potatoes on a large

scale will be a new undertaking to most of us and it is my opinion that we should try to work out some system whereby we can secure the services of a practical potato grower to assist the members of this association for the first year. Each field should be inspected during the growing season by a competent judge of potato diseases and a certificate issued to men whose fields are free from disease. These certificates should be attached to the product when sold, thereby helping the grower to dispose of his crop at a few cents more per bushel than the market price."

Mr. Reish, who grew 9,000 bushels of potatoes in Maine last season, also addressed the meeting, in part as follows:

"My rotation was as follows: Clover, oats, potatoes. I always fall plow for potatoes, then begin cultivation early in the spring to keep the land free from weeds until planting time. I begin my planting so that I am through by June 15. My fertilizer was of a very high grade as I used 4:6:10, that is, four per cent ammonia, six per cent phosphoric acid, and ten per cent potash. I used 1,600 pounds of this fertilizer per acre.

"Both the one and two-man potato planters were used on my farm with equal success. We start cultivation as soon as the plants appear above ground. We cover the potatoes when they first appear but have found that they should only be covered once. Spraying starts when the potatoes are about four inches high, and I found that my home-made Bordeaux mixture gave the best results.

"Success in potato culture means hard work and constant attention, that is, a man must be on the job all of the time."

Other speakers were Milton Carmichael, acting secretary of the Michigan Association of Agriculture and Commerce, and Dr. Eben Mumford, head of Farm Management work at M. A. C. The latter urged the growing of one standard variety of potatoes by all the farmers of the county and advocated the adoption of a stamp by the association under which all potatoes would be sold, making the stamp a guarantee of purity and freedom from disease, which would soon give St. Clair county a national reputation for good potatoes.

LILLIE FARMSTEAD NOTES.

Someone has said that the great law of nature is compensation; that is, if there is a drought in one section there will be an excess amount of rain in another; if there is extreme cold in one place there will be extreme warmth in another, a dry summer means a wet fall, and so on. Certainly this law has been exemplified somewhat in this vicinity this year. We had a drought in the summer time and the meadows and pastures were extremely short. They didn't yield as they usually yielded. But we were compensated in part, at least, by the fact that we had rain in the fall which started up the grass, and then we had mild weather that continued extremely late. I never knew a fall where one could leave the young cattle and the sheep out as late as we did this year. Our young cattle were not taken into the barn until nearly the last of November. We usually take them up the last of October or the first of November. And the sheep were out until well along in December. It is safe to say that the grass for the pasture for young stock and for sheep was a month later this fall than usual. Of course, these animals being able to get a month's food in the pasture more than usual, is going to make short winter feeding for them, and while we didn't have as big a crop of hay we are not going to need as much as we would had we had to get them up the first of November, and thus nature has compensated for her lack of moisture in the summer time.

Last fall was one of the best falls for doing fall work, fall plowing, etc. Everybody did fall plowing, and I think everybody got all the fall plowing done that they wanted to, with the exception of myself, and I never get quite through, although I have a good start on the spring work for we have fully 100 acres fall plowed. There was one 20 acres of sod about two-thirds plowed that I really wanted to finish, but the land froze up and we had to quit. Certainly with anything like a decent spring for doing the spring work we ought to get the crops in

in good shape next spring. If we do it is a good sendoff towards a prosperous year on the farm.

A good growing fall put the wheat into winter in good condition. I don't think I ever saw wheat on the average go into winter better than it did this fall. So far we haven't had any cold weather that would injure the wheat, and everything is promising. Of course, "it doesn't pay to crow until you get out of the woods," and there is plenty of time yet for cold weather to destroy wheat. The first cold snap of the winter is here now, on January 12, but it started in with a very good snow storm and the ground is all covered with snow. Wheat has a nice warm blanket to protect it against the zero temperature which is upon us. The ground is only slightly frozen and with this blanket of snow we could have extremely cold weather and yet not injure wheat or young clover.

The dairy cattle, the young cattle, the hogs, and even the hens, have started into the winter doing well and are in a good thrifty condition. One reason I am sure, is that what fodder we have is of good quality. There isn't any question but what dry weather, while it makes scant forage crops, makes forage crops of splendid quality. While, with an excess or abundance of moisture we get larger yields, yet they don't contain the food nutrients in proportion that forage crops grown with a less amount of moisture do. However, with a sufficient amount of rain we get more food nutrients per acre, which makes the crops more valuable. We don't want a repetition of the drought of last summer by any means.

I think our fall pigs have got the nicest start they ever got. It is due largely to the fact that I sacrificed a new seeding of clover for the benefit of the pigs. Perhaps the clover is not sacrificed and perhaps it will come on all right next spring. However, it didn't have any too good a growth owing to the dry weather last summer. When the fall rains came it started up in very good shape, indeed. We had no other pasture for the sows and young litters of pigs. I kept them

shut up just as long as I could stand it. Then we opened the gates and let them into 25 acres of new seeding of clover. They did thrive and they did enjoy it. The weather was warm and pleasant and what they got out of the clover seemed to simply balance up the ration and make them grow, and such nice weather allowed them to be out continually taking exercise until into December. Now we have got them on their winter rations of skim-milk, ground barley and middlings, a little corn, and alfalfa hay. It is really a pleasure to see these shoats eat alfalfa hay. They seem to relish it just as much as lambs, and I am thinking it does them almost as much good as it does lambs.

COLON C. LILLIE.

FARM NOTES.

Seeding Alfalfa in Fall and Spring Grain.

I have a field of seven acres; 2½ acres sown to rye, the other part is fall plowed for oats and is well tile drained. Would it be advisable to seed this to alfalfa with the rye and oats? Will the alfalfa roots fill up the tile? Tile is 2½ to 3½ feet deep. Land has been well kept up. Clinton Co. O. R.

When our land becomes well inoculated with the bacteria peculiar to the alfalfa plant, we can, in the writer's opinion, seed it in any manner in which we can now seed clover, with every prospect of success. When alfalfa has never been grown on a given soil, however, the success of the first crop is rather uncertain and it would not be a profitable experiment to seed it alone in fall-sown grain. It is a good idea, however, to mix a little alfalfa seed with the clover seed when seeding fall-sown grain, as in this way the tendency is to bring about a natural inoculation of the soil with the bacteria peculiar to alfalfa. This will also demonstrate whether alfalfa can be successfully seeded in this manner or not. The prospect of getting a good stand of alfalfa is much better where it is sown in oats on a well prepared seed bed, provided the oats are sown rather thinly, say a bushel per acre, or not more than one and a half bushels at the most. If clover has not grown well on this land, it may be necessary to apply lime to succeed with alfalfa, but in case there has been no difficulty in getting clover seeding, this will probably not be necessary. It would be a profitable precaution to inoculate the soil with the bacteria peculiar to the plant, by sowing some soil from a field where alfalfa has been successfully grown, or by using a pure culture to inoculate the seed.

Alfalfa roots do not bother tile drains which are in proper working order. When there is water in the tile there is plenty in the soil, while in time of draught there is no water in the tile to stimulate a root growth in that direction.

Clover vs. Soil Fertility.

Does mammoth clover when allowed to go to seed and harvested take more from the soil than it puts back in the soil? This is being freely discussed here. Calhoun Co. A. M.

A clover crop always takes more of the mineral fertility of nitrogen, but as this is the most expensive fertility, and as the clover plant adds vegetable matter as well, and improves the mechanical condition of the soil, it is beneficial to the soil. In quantities such as are usually produced, clover seed would not remove anything like the amount of nitrogen from the soil which the plant would store up and leave in its roots, also if the clover chaff were returned to the soil, the mineral fertility removed would be comparatively small in the usual yield of clover seed, hence, the land would be benefited rather than depleted by the use of the crop for this purpose.

Is this copy of The Michigan Farmer worth one cent to you? That is all it costs—50 cents for a year, \$1.00 for two years, \$1.25 for three years, or \$2.00 for five years. Send your order at once if you have not yet renewed.

CATALOG NOTICES.

The Fayway Butter Separator, manufactured by the Blanton & McKay Co., 510-512 Carr street, Cincinnati, Ohio, is illustrated and described in a catalog sent on request. In it will be found complete information regarding this new method of separating the butter-fat from cream by which the fat globules are removed by an entirely new principle and more completely than by the old-fashioned churn. Write for the catalog, mentioning the Michigan Farmer.

The "Reo Echo," published by the Reo Motor Car Co., Lansing, Mich., contains much matter of interest to motorists as well as those engaged in the motor car trade, particularly the articles descriptive of tours taken in different sections of the country. Write for a sample copy, mentioning the Michigan Farmer.

THE FARMER AND THE LABOR PROBLEM.

One of the most difficult problems to be solved of late years, by the farmers of this section, has been that of procuring sufficient help to do the necessary work of the farm, especially in the rush season. The influence of scarcity of farm laborers has been many-sided and far-reaching. Farmers who would otherwise embark in farming on a more extensive scale, have been kept from making the venture, because of the difficulty of obtaining reliable helpers. Other farmers engaged in extensive farming, have cut down their farming operations, for the same reason. Men in cities and villages who would like to engage in farming have been deterred from so doing, because of this same scarcity of help to do the work on the farm. Indeed, so far-reaching in its results has this labor problem become, that it has grown to be a factor in the great movement of the rural population toward the villages and cities. More farmers quit farming and move into town, and fewer men from the towns embark in agricultural pursuits, as a result of the very limited supply of farm laborers.

In a study of the labor problem on the farms, it soon becomes apparent that a condition not always thought of has been produced by the necessity of the case. In order to get his work done, the farmer has been obliged to resort to substitutes for the farm hand, and he has found these substitutes in up-to-date farm machinery and in up-to-date farm methods. The silo, the manure-spreader, the hay-loader are only illustrations of the many modern devices that are helping the farmer to run his farm with less hired help.

But out of this situation has grown another factor in farm life of today. The modern devices and labor-saving machines are expensive, and the owner of an 80-acre farm must of necessity stock up with tools and implements to an extent that makes farming an expensive occupation for which to prepare. For this very reason, many men who would like to farm, become disheartened before they have begun. The increase in the price of land coupled with the expense of getting in shape to do the work with as little help as possible, makes "Going on a farm" a different proposition from what it was a quarter of a century ago. Without a doubt, the country is a much better place to live in these days, with its rural free delivery and its rural telephones, but the problem of getting there and getting started is more difficult than ever before, to the man with average means, from the towns and cities.

But perhaps you will say, why do not these men from the towns who wish to embark in farming, go into the country and become farm laborers and thus fill the great gap that is now open. At first glance, this would seem but the natural course for a man with little means, and the plan is sometimes followed. But in the majority of cases, men in town who have been working in shops and factories or stores, have grown tired of working for others, and look upon farming as a more independent occupation. They want land of their own, and wish to be their own boss, and the call of the farm is not for them unless this dream of independence can be realized.

In ages past, men have opposed stubbornly, the innovations brought about by the invention of machinery, because it has thrown them out of employment. With machinery on the farms, the case is exactly opposite. Modern farming machinery is not replacing the farm laborer, it is filling in some small measure the gap caused by his absence. It is the only way the farmer has yet found to cope successfully with the labor problem. The condition calls for capital and makes the farming proposition look big and difficult to the man of small means.

Hillsdale Co. J. A. KAISER.

RURAL UPLIFT MOVEMENTS.

Today the farmers are confronted with a great many problems. Some of them are being solved but the solving of a few of the great problems does not make rural life as it should be. One of the greatest faults with the average farmer is that they do not get together on the different problems and consequently we cannot expect much rural uplift, until every farmer is working along this particular line. Better business methods on the farm are needed along with good roads, good churches and co-operation. The farm producer does not get enough

on the market for his products. He gets about one-third of every dollar the consumer spends for foodstuff. If the farmer could sell direct to the consumer or the retailer his profit would be much greater. The farmers must co-operate and arrange some organization whereby it will enable the producer to get more for his produce and the consumer pay less.

The question arises, how much does the farmer actually spend in the selling of his goods, in the way of advertising, marketing, etc.? The answer is that very few farmers spend anything for this purpose. The retail merchant for instance, spends from 15 to 20 per cent of the retail price of the goods for selling. This money goes into the study of the demand, attractive arrangement of the merchandise, advertising to attract customers, service to keep them, clerks to wait on them and the expense of a store building to sell in. After a merchant does all these things we can see why his profits are larger than the average farmer. The merchant, in other words, follows business principles and this is one great thing that is lacking among the farmers. The merchant is not the only business man that spends a great deal for selling but the banker, railroads, manufacturer, corporations, insurance companies and public service corporations all spend something for sale work. Getting customers, holding them and creating a good will is an indispensable factor in their operations. Some farmers, however, do spend a great deal along this line and invariably these farmers are the most successful ones.

Boys' corn clubs and pig clubs, horticultural societies, and girls' sewing clubs and bread-baking contests all aid in rural improvement. I know of a certain county in this state in which the corn yield was rather low. About five years ago a boys' corn club was organized in this county. Good seed corn was furnished by the county superintendent and was held at the county seat. Prizes were awarded on the best samples of the different varieties of corn, on essays to be written by the boys, and on judging corn. Methods of corn improvement were studied by the club and the increase in corn production which has been general in the county was due entirely to the boys' corn club. I believe pig clubs, sewing clubs and bread-baking contests will bring as good results as this boys' corn club. Clubs of this kind tend to stimulate a greater interest among the young people in higher agricultural education.

We need better churches in the country. Some communities have very good churches but the preachers are too poorly paid and consequently a poor preacher is secured. This directly affects the attendance, as very few farmers care to go across the road to hear a poor sermon. It is very proper to discuss up-to-date farming in the church, but this is usually not the case. They think the church should be used for nothing other than for religious purposes. More profitable farming may mean a better preacher.

Good roads are bound to come sooner or later. National interest has been remarkable in the last few years. The city people as well as the farmers would be benefited by good roads. As a result of good roads people would be able to get closer together, enabling them to get in touch with one another. This will be a great step toward educational, social and economic advantage.

No one thing alone is entirely to blame for the present condition of the country but to be able to notice an uplift in rural improvement all of these factors must combine and work together. Better business methods on the farm, co-operation, good roads and good churches are all very important essentials in rural improvement.

Indiana. J. C. KLINE.

YOUR SIGNATURE, PLEASE.

When writing for information of any kind, be sure and sign your name to the letter of inquiry. The name will not be published if a request to that effect is made. All inquiries to which the subscriber signs his name and gives his post office address, will be promptly answered, but we cannot answer anonymous communications.

Argentine exports of frozen mutton to England have fallen off a good deal, and efforts to buy sheep in the Chicago market for export to England have been made of late, but prices were higher than exporters could afford to pay, \$5.25 per 100 lbs. being offered for fat wethers.

Studebaker

WAGONS BUGGIES HARNESS



In use for 42 years
—and still going

FORTY-TWO years ago Mr. Balch of Coshocton, Ohio, bought a Studebaker farm wagon. He used this wagon for twenty-two years and then turned it over to his son, L. J. Balch. In a letter to Studebaker, ordering another wagon, Mr. Balch writes:

"My father used it for 22 years and I have used it for twenty years and can say that there has never been a spoke moved in any of the wheels and it has the same boxing and spindles that were put in it when made. Tires have been changed from narrow to broad, but axles, bolsters and singletrees are those originally furnished with wagon. Last summer I hauled 6,800 pounds of weighed material in it at one load."

NOT UNUSUAL FOR A STUDEBAKER WAGON

You can buy a Studebaker wagon today that will repeat the performance of the wagon owned by Mr. Balch. We are building wagons today with the same care and of just as good material as we did when Mr. Balch bought his wagon. In fact, Studebaker wagons, because of improved methods of making, are even better today.

When you buy a wagon don't judge it by its looks alone. Stop and think what is underneath the paint.

You may be offered a wagon that looks as good as a Studebaker and the price may be less—but when you stop and figure that the cheaper wagon will probably last you five or ten years whereas a Studebaker will last a life time there is only one answer—You want a Studebaker.

Whether it is a Farm Wagon, Buggy or Harness, Studebaker's policy is "build not the cheapest but the best."

Invest your money where you get the largest returns—buy a Studebaker.

See our dealer or write us

STUDEBAKER

South Bend, Ind.

NEW YORK
MINNEAPOLIS

CHICAGO
SALT LAKE CITY

DALLAS
SAN FRANCISCO

KANSAS CITY
PORTLAND, ORE.

DENVER
Adv 2001

Studebakers last a lifetime

A SILO THAT WILL LAST FOREVER

A permanent, fire-proof, weather-proof, acid-proof structure, requiring no attention after completion. Guaranteed to fill completely every requirement of a first class silo. The best for the least money.

CEMENT STAVE SILO

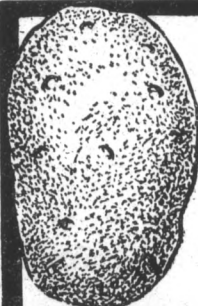
The concrete is "puddled" into the mold by a new and improved process, where it is left until firmly set, making a product 100 per cent strong, very dense and non-absorbent. Built on the same principle as all scientific concrete constructions.

We do not sell material, but we do sell silos. Our price is always for the completed silo. No worry about construction. Our experts do all the work and do it right, or no pay. And our price is less. Ask us for particulars.

SPECIAL INDUCEMENTS FOR EARLY CONSTRUCTION.

Notwithstanding the low price we will make a liberal reduction for early construction. Get in touch with us at once. Do not contract for a silo until you have carefully investigated this "puddled" cement stave silo. Our new catalog is ready, write for it today. Good agents wanted in unoccupied territory.

CEMENT STAVE SILO CO., 121 Main St., WORTHINGTON, INDIANA.



Do you raise early or late potatoes?

There's a difference between early and late varieties that should be considered in fertilizing. For the early kind use 1,000 pounds per acre of a fertilizer containing 10%

POTASH

5% ammonia and 8% phosphoric acid. Under average conditions, 800 pounds of 3-6-8 is the most profitable for late crops.

Some growers double these amounts, for they are convinced that Potash Pays.

Caution: Be sure your Potash for potatoes on heavy soil is in the form of Sulfate.

Write for Potash prices and for Free books with formulas and directions. We sell any amount of Potash from a 200-pound bag up.

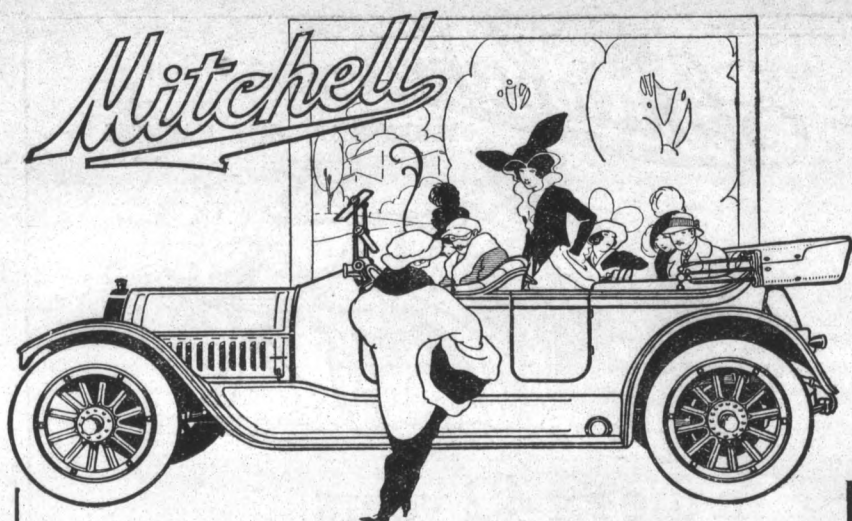
GERMAN KALI WORKS, Inc.

42 Broadway, New York

Chicago, McCormick Block Savannah, Bank & Trust Bldg.
New Orleans, Whitney Central Bank Bldg.
San Francisco, 25 California St. Atlanta, Empire Bldg.



When writing advertisers please mention The Michigan Farmer.



Mitchell Big Six \$2,350.00

An uneven road plays hob with an automobile that isn't properly constructed and which lacks engineering balance. It strains the frame, the axles, the springs and the motor of a cheaply built car and no amount of repairs can ever make it good.

The Mitchell car is built to give where the give is necessary—to resist the strain and sudden jolt—to surmount these and other difficulties without the disastrous wear and tear which makes other cars burdens after a year's use—or less.

Farmers need better cars than people who live on smooth boulevards and there are hundreds of modern farmers who will tell you that the Mitchell has lasted them—in constant use—five, six, seven and eight years and are still the splendid utilities today that they were when bought.

The Mitchell car is more car and better car for the money than any other car in existence and we commend it to the farmer who wants an economical utility rather than an expensive luxury.

The Mitchell Models for 1914:

The Mitchell Little Six—fifty horse-power—132-inch wheel base—36x4½ inch tires—two or five-passenger capacity - - -	\$1,895
The Mitchell Big Six—sixty horse-power—144-inch wheel base—37x5 inch tires—seven-passenger capacity - - -	\$2,350
The Mitchell Four—forty horse-power—four cylinders—120 inch wheel base—36x4½ inch tires—two or five-passenger capacity	\$1,595

Equipment of all the Mitchell Models Included in the List Prices Here Given

Electric self-starter and generator—electric lights—electric horn—electric magnetic exploring lamp—speedometer—mohair top and dust cover—Jiffy quick-action side curtains—quick-action rain vision wind-shield—demountable rims with one extra—Tungsten valves—double extra tire carrier—Bair bow holders—license plate bracket—pump, jack and complete set of tools. Prices F. O. B. Racine.

Mitchell-Lewis Motor Co.
Racine, Wis., U.S.A.

Eighty Years of Faithful Service to the American Public

Metz Bros, Niles, Mich.

We have a fine lot of imported and American bred

Percheron Stallions

on hand and we can sell them for less money than any other importer. Write us your wants.

METZ BROS., Niles, Michigan.

JACKS and MULES

Raise mules and get rich. 13 Jack and Mule farms under one management, where can be seen 420 head fine large Jacks, Jennys and Mules, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address: **KREKLER'S JACK FARM**, West Elkton, Ohio. Branch barns, Clinton, Ind.



FOR SALE

2 Pure Bred Registered Suffolk Stallions 9 years old. Absolutely sound, good stock getters, good to work and as quiet in harness as any mare or gelding. One imported from Suffolk weight 2000 lbs. Other Canadian bred weights 1500 lbs. Both are registered in American and English Registration Books, and are good enough to go in any show ring; also 3 span of mules and 25 other horses. All horses not sold before Feb. 10th, will be sold at auction at Almont, Mich. on that date. For particulars address, **FRANK BISHOP, Almont, Michigan.**

18 Percheron Stallions

2 to 4 years old, blacks. Also young mares.
A. A. PALMER & SONS,
BELDING, MICH. 1¼ Miles from Orleans.

Colic Kills 2000 Horses

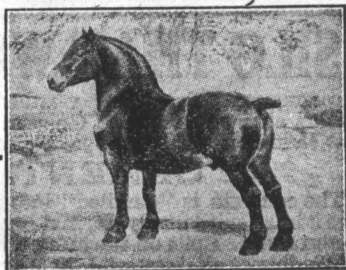
That number died of colic in New York City alone last year. Colic comes suddenly, and if not attended to immediately with the right remedy, kills quickly. Our colic compound cures in 15 minutes. Easy to give, and animal is soon ready for work. Have it on hand. \$1.50 per bottle, guaranteed.

DR. HOLLAND COMPANY
217 Water St., Boston, Mass.



Horse over shoes that are sharp-shod for icy weather. Buckled on in one min. Let us send you 1 or 2 sets C.O.D. by Par. Post, \$3 per set delivered. Extra treads with sharp calks 30c. each, guaranteed to prevent slipping. Write for circular.
Herman Mfg. Co., 1420 Pa. Av., Washington, D. C.

Just Say "Saw your ad. in the Michigan Farmer" when writing advertisers



HEWO BELGIANS They Are Here!

H. & H. Wolf, importers of Belgian Horses exclusively, advise old and prospective patrons that their new 1913 importation is now in their barns. It is in all respects by far the most select lot of horses of this breed that have ever been stabled in their barns. Big, weighty, typey drafters of quality all through, that challenge comparison with the Best Anywhere. A select lot of mares, too. Get our terms and Guarantee. This will interest you as much as the horses.

Hewo Stock Farm
Wabash, Indiana
More than a quarter century
with the breed.

Try It
30 Days



W. H. EDGAR & SON,
132 Lafayette
Blvd., Detroit, Mich.

I have.....head of
cattle.....sheep.....hogs

and.....horses. Send me
your trial proposition to prove that
Buckeye Feeding Molasses will benefit
all of them.

Name.....R. F. D.....
P. O.....State.....

Mail this
Coupon
Today

Live Stock.

THE LIVE STOCK MEETING.

The twenty-third annual meeting of the Michigan Improved Live Stock Breeders' and Feeders' Association was held at the Agricultural College, East Lansing, Mich., on January 14-15. As usual the first day was given over to sectional meetings of the various affiliated breeders' associations, which were well attended by enthusiastic patrons of the several breeds represented. Space will not permit a detailed report of these several meetings in this issue, but a list of the meetings held and the officers elected by each for the ensuing year will be given in a future issue.

One new association, composed of Michigan Angus breeders, was organized at this meeting through the efforts of Mr. Minty, who was elected as its secretary, who apologized for the Angus breeders for not taking a more active part in the general association in former years. The addition of this new organization of the patrons of one of the leading breeds of beef cattle is a matter for congratulation, as it should prove an important influence in the breeding and feeding of better beef cattle in Michigan.

Following the several breed meetings on Wednesday, the breeders assembled in a general session in the large assembly room in the Agricultural Building for the purpose of enrolling the membership for the ensuing year, and for a short program, including reports from the secretaries of the several breed associations, and an address on "Live Stock Possibilities of the Upper Peninsula," by A. T. Roberts, of Marquette, president of the Upper Peninsula Development Bureau. The interest developed in the several sectional meetings was attested by the fact that their members were slow to gather for the general session, and the reports of the secretaries were all enthusiastic and expressive of the general feeling that the coming year is bound to be a prosperous one for Michigan breeders and feeders.

Following this session the members, who were supplied with luncheon tickets upon payment of their annual dues, repaired to the Women's Building, where they were given the usual banquet by the college. Here the good cheer and optimism which ever characterizes these occasions was much in evidence during the post prandial speaking by the guests of the Association from other states and a few representative Michigan breeders.

The General Program.

The general session on the second day of the meeting was of high educational character from start to finish. The address of President Stevenson sounded the note of optimism for the future of our breeding and feeding industry and suggested some needed improvements in the work of the organization to enable it to keep pace with the progress of the industry and improve the opportunities presented for its betterment. The speakers announced on the program were all present, including E. H. Webster, of Wisconsin, associate editor of Hoard's Dairyman, who spoke on "Farm Management as a Good Breeders' and Feeders Problem." H. G. Krum, of Minnesota, Secretary American Yorkshire Club, whose topic was "Economy in Pork Production," and Prof. J. M. Evvard, of the Iowa College of Agriculture, the subject of whose address was "Feeding Sheep and Lambs for Profit." The substance of these addresses will be presented in future issues for the benefit of those who were unable to attend the meeting and hear them.

The election of officers resulted in few changes, the choice being as follows: President, A. E. Stevenson, Port Huron; vice-president, W. P. Rosso, Mt. Clemens; secretary, George A. Brown, East Lansing; assistant secretary, D. A. Spencer, East Lansing; treasurer, C. S. Bartlett, Pontiac; executive committee, W. H. Shantz, Hastings; Frank R. Crandall, Howell; Geo. H. Brownell, Detroit; Colon C. Lillie, Coopersville; Dr. C. G. Parnell, Jackson.

Resolutions were reported and adopted favoring government supervision of the manufacture of hog cholera serum by commercial concerns and favoring the providing by the state of a detention farm for the isolation of valuable animals which have reacted to the tuberculin

test, at the proper expense to the owner. Resolutions of sympathy were also adopted and ordered transmitted to Prof. Shaw, who was unable to be present at the meeting on account of the serious illness of a son.

Following the completion of the program the members assembled in the live stock pavilion for the judging of the carcasses of the lambs exhibited at the wether lamb show which was a feature of the meeting. Prof. Evvard used the carcasses to demonstrate his lecture in which the reasons for the relative placing of the awards were given. This was a most instructive feature of the meeting, and was a fitting close of the event, which was one of the most successful ever held by the association.

WETHER LAMB SHOW.

Held at Michigan Improved Live Stock Breeders' and Feeders' Meeting.

Five classes of wether lambs were shown in this contest, Shropshires, Hampshires, Black-faced Westerns, White-faced Westerns, and Rambouillets. The lambs were shown on foot, January 14. In the evening of January 14 they were slaughtered, and shown in carcass form, January 15.

The report of the live contest is as follows:

Shropshires were shown by Mr. W. H. Shantz, of Hastings, M. A. Bray & Son, of Okemos, and Mr. D. A. Meeker, of Olivet; each of these men exhibited two lambs. In the live show, Mr. W. H. Shantz won first and second prize, and M. A. Bray & Son, third prize.

Hampshires were shown by Mr. E. L. Belden, of Dimondale. Mr. Belden exhibited two lambs and received first and second prize.

Black-faced Westerns were shown by Mr. C. M. Halladay, Mr. H. A. Martin, Mr. Wm. Dewey, Mr. Wm. Godd, and Mr. A. J. Allen & Son, all of Clinton, each exhibitor showed one lamb. A. J. Allen & Son received first prize, Mr. Wm. Dewey, second prize, and Mr. C. M. Halladay, third prize.

White-faced Westerns were shown by the same men who exhibited the Black-faced Westerns, and each man exhibited one lamb. A. J. Allen & Son received first prize, Mr. C. M. Halladay, second prize, and Mr. Wm. Dewey, third prize.

Two Rambouillets were shown by Mr. F. S. Freeman, these being awarded first and second prize.

Mr. David McKay officiated in a very able and pleasing manner.

Mr. W. H. Shantz, of Hastings, won first and third in the carcass contest, and Mr. E. L. Belden, second. The carcasses were judged by Prof. J. M. Evvard, of Ames, Iowa. Prof. Evvard showed excellent ability in this work, and was very consistent with Mr. McKay's judgment of the live animals.

The Shropshire lamb that won Grand Championship on foot yielded the first prize carcass. The second prize carcass was from the first prize Hampshire and the third prize carcass was from the second prize Shropshire.

LIVE STOCK NEWS.

In the Chicago sheep and lamb market the demand for feeders continues active, with scarcely any feeding sheep or yearlings offered, but there have been considerable numbers of feeder lambs, these consisting of warmed-up, half-fat stock suitable for short feed. Whatever happens in the market for live muttons, whether these chance to move up on short supplies or move down on liberal runs, feeding lambs that are at all desirable are pretty sure to bring firm prices.

Fairly large numbers of lambs are being hay-fed in western sections, and most that have been received of late in the Missouri River markets were spoken of as good in quality, commanding high prices. The best flocks sold recently around \$7.50 per 100 lbs. Advices from the western territory where hay feeding is going forward say the weather during the autumn and early winter was remarkably mild and pleasant, so that lambs fattened much faster and more satisfactorily than usual.

Peter Jansen, of Beatrice, Neb., formerly one of the largest sheep feeders in the United States, but now retired from activity in that industry is at a loss to understand why the farmers of this country do not breed and mature more sheep. After handling flocks for a period of 40 years, he says there is no domestic animal which repays a little care better than sheep. They destroy weeds and use up roughage which would otherwise go to waste.

FEEDERS' PROBLEMS.

Balancing the Pig's Ration.

What per cent of digestible protein, carbohydrates and fat does it take to make a pound of pork? How do you find the cost of the digestible nutrients when you have the cost of the feed per cwt? What percentage of protein, fat and carbohydrates should be fed per day to produce the quickest gains at the lowest cost per pound of gain in growth and weight? Can slow gains be made cheaper than quick gains, and why?

Monroe Co.

W. DeK.

In figuring the nutritive ratio of the ration for live stock, the amount of digestible fat is multiplied by 2.4 for the reason that it is considered as having this relative heat value as compared with carbohydrates. To this result is added the amount of digestible carbohydrates in a given amount of the feed, and the result is divided by the content of protein to give the nutritive ratio. In Henry's Feeding Tables the proper nutritive ratio for the ration of swine is given as 1:4 for pigs of 50 lbs. weight, 1:5 for pigs 100 lbs. in weight, and 1:6 for hogs 200 lbs. in weight, except for fattening hogs, when a ration as wide as 1:7 in its nutritive ratio is recommended for the finishing period.

In the compounding of a ration, it is hardly necessary to figure on the cost of all digestible nutrients, since the home-grown grains will ordinarily be taken as the basis of the ration, and purchases will be limited to supplementary feeds which will supply the necessary protein to balance up the ration, consequently in making up a ration for growing pigs, the problem is to supply the needed protein to supplement the home-grown feeds at the lowest possible cost without losing sight of the important factor of palatability in the ration, which has a marked influence upon the economy of the gains produced.

Under ordinary circumstances, the most rapid gains at the lowest cost per pound will be made where a well balanced ration is fed, corresponding somewhat nearly to the nutritive ratios above given. The amount which should be fed per day depends very much upon the capacity of the pig, as the more nearly one can approach the maximum limit of the pig's digestive and assimilative capacity and avoid the danger of getting him "off feed," the less will be the amount of feed necessarily devoted to bodily maintenance before the pig's maturity to market weights. A certain amount of feed is required to maintain the bodily functions of the pig, and the slower the gain, the longer this amount must be fed simply for maintenance to secure a given amount of gain.

It does not necessarily follow, however, that the most rapid gains possible to produce will be the cheapest possible gains, since this involves high feeding on concentrates. Experience has proven that much cheaper gains can be produced upon pasture, especially some pasture which is rich in protein, as alfalfa. Pigs fed a grain ration of say one-half of their maximum capacity on alfalfa pasture may make somewhat slower gains in weight than would pigs fed a maximum grain ration, but such gains would be much cheaper. In winter feeding alfalfa hay or similar forage can likewise be made a factor in the ration and the cost of gains be thereby somewhat reduced, even though the gains may not be as rapid as where a maximum grain ration is fed. If we compare rapid gains and slow gains on the same ration, however, it will be found that the slow gains will be more expensive for the reasons above stated.

The worst feature of the Chicago sheep and lamb market of late has been the tendency of sheep feeders in Iowa and other surrounding states to ship in short-fed flocks of lambs because of bad weather and unwillingness to feed high-priced corn. This course is opposed to sound business principles and results in these shipments being sold at prices that frequently eliminate fair living profits, many of the consignments being purchased by other sheepmen and returned to the country for finishing properly. The demand for good feeders is insatiable, and not enough good feeding lambs are offered to go around, high prices prevailing even at times when fat handy lambs are declining. However, most of the time finished lambs, as well as yearlings, wethers and ewes are purchased at strong prices.

While there is every probability that plenty of short-fed cattle of an ordinary class will be received in the markets of this country for several weeks to come, the prospects are strong that no excessive numbers of fat beefs will be marketed the remainder of the winter and next spring. The production of beef in the trans-Missouri territory will be of moderate proportions, and it is presumed that the wants of the Pacific coast will use an even greater proportion of such cattle than usual during the first quarter of this year.

SAFETY FIRST

Five Bars and a Crosstie—
the Safety First Symbol

Five thick, tough Goodrich Rubber fingers—
They dig down through mud, slush and ooze; they clean and grip the road. They stop the skid before it starts. They give you lower-cost mileage because of the extra thickness of rubber at the point of contact.

Goodrich Safety Tread Tires
Best in the Long Run

Don't experiment. Don't take chances. Look for the five bars and the crosstie when you choose a non-skid tire.

Read the reduced prices below. Better still, tear out this price list and hand it to your dealer.

Don't pay more than the prices named here for the accepted standard non-skid and smooth tread tires:

Size	Smooth Tread Prices	Safety Tread Prices	Size	Smooth Tread Prices	Safety Tread Prices
30 x 3	\$11.70	\$12.65	34 x 4 1/2	\$33.00	\$35.00
30 x 3 1/2	15.75	17.00	35 x 4 1/2	34.00	36.05
32 x 3 1/2	16.75	18.10	36 x 4 1/2	35.00	37.10
33 x 4	23.55	25.25	37 x 5	41.95	44.45
34 x 4	24.35	26.05	38 x 5 1/2	54.00	57.30

Free—Send for booklet "Rules of the Road"—and other valuable information. Address Service Dept. No. 25

There is nothing in
Goodrich Advertising that
isn't in Goodrich Goods

The B. F. Goodrich Co.

Factories: Akron, Ohio

Branches in All
Principal Cities



THE IMPROVED DEHORNER

has reinforced knife,



eccentric gears, arched handles and other superior features. The new Keystone Improved Dehorner is the latest and most efficient dehorning device on the market. Four cutting edges, making clean, shear cut. No tearing or splintering. Stock are better without horns. Why not use the best device when dehorning? Money back if not satisfied. Write today for booklet.

M. T. Phillips, Box 126 Pomeroy, Pa.



\$3 Package CURES any case or money refunded
\$1 Package CURES ordinary cases. Mineral Heave
Remedy Co., 463 N. Fourth Ave., Pittsburgh, Pa.

Condition Your Live Stock

All animals have worms, causing them to be thin in flesh, to lose appetite, and to become run down generally. Our Condition and Worm Powders tone up the whole system, start the animal to thrive and put him in a healthy working condition. Try a box 50c. Ask about our free consulting Certificate.

DR. HOLLAND COMPANY.
227 Water St., Boston, Mass.

BUILD A SILO THAT WILL LAST FOR GENERATIONS

A silo must have an airtight and moistureproof wall to keep ensilage fresh, sweet, succulent and palatable. Don't put up a silo that soon will need repairs, and, even while new, does not prevent your ensilage from souring or rotting. Build a

NATCO IMPERISHABLE SILO

The silo that's made of vitrified clay hollow blocks, each layer reinforced by continuous steel bands, and that keeps ensilage in perfect condition right down to the last forkful. Build a silo that will last all your lifetime and for several generations after you—a silo that never needs repairs or painting and that stands a monument to your good judgment.

Weatherproof—Decayproof—Vermiproof—Fireproof

A Natco Imperishable Silo wall never swells nor shrinks, never warps nor cracks. There are no hoops to tighten, no continual outlay for repairs—no loss from wind or weather—it's proof against them all. Any mason can erect a Natco Imperishable Silo and when the job's completed, you are through with silo troubles forever.

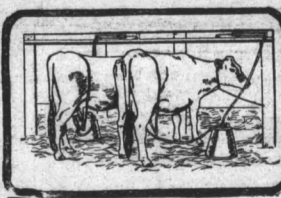
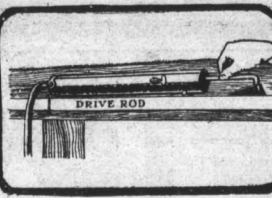
Write Today for FREE Silo Book

We have an attractively illustrated book full of valuable information about ensilage and which also gives a complete description of the Natco Imperishable Silo. May we send you a copy? Ask for Book A.

NATIONAL FIRE PROOFING COMPANY, Lansing, Mich.



When writing to advertisers please mention the Michigan Farmer.


No Vacuum in the Pail

The perfection of the 1914 HINMAN valve chamber makes the Hinman an absolutely noiseless milker. No clicking. The cows stand in perfect contentment. In hundreds of cases the milk flow has been increased where the Hinman is used.

The HINMAN Milker

This new type of valve chamber has visible milk flow, is thoroughly sanitary and easily cleaned—it has positive vacuum control. 2500 cylinders sold in 1913. Every customer claims it is perfection—but the new model is still better.

Every Up-to-date Milker Feature

The Hinman milks one cow at a time with each unit. The following are found only in the Hinman: No vacuum in pail; rapid pail changing; no piping—just a simple drive rod; only two moving parts; simple system of keeping record of each cow.

Free Booklet Will Tell You More

It's a genuine text book. If there is any feature of the Hinman you do not understand give us an opportunity of telling you about it. Learn the facts before you buy. 60,000 cows milked daily. Agents everywhere. One is near you.

HINMAN MILKING MACHINE CO.
74-84 Elizabeth St., Oneida, N. Y.

TO BE CONTINUED—WATCH THE ARROW.

Away With Churns!

Use the "Fayway"—Get More and Better Butter
Stop Old-Fashioned, Wasteful Churning!



\$1.00
Brings It

This marvelous machine is NOT A CHURN—it's a BUTTER MAKER! Does the work in half the time of the best churn. Gets MORE butter and BETTER butter from the same cream than by any other known process. The greatest MONEY MAKER for farmers and dairymen ever introduced. Make your butter bring more per pound!

Revolutionizes Butter Making!

Fayway Butter Separator

The "Fayway" System produces butter by an entirely different process—no "whipping" or "beating" with paddles or blades. A stream of air blows the billions of butter globules to the top—gets ALL the butter-fat!

How It Works

Just pour in the cream, turn the crank a few minutes and presto!—there's the butter! Actually fun to make butter with the "Fayway"—all drudgery abolished!

Amazing Results

"Fayway" butter has a beautiful waxy texture. Tastes better, keeps longer, brings 6c to 10c more per pound than ordinary "churned" butter, and you get more of it.

Our \$1.00 Trial Offer

We don't ask you to take our word. We want you to SEE with your own EYES how the "Fayway" makes butter. Simply send \$1.00 deposit to show you are really interested and we will ship this amazing machine for a free trial in your own home. If it doesn't do exactly what we claim, back comes your dollar!

Write for Free "Fayway" Book

and Prospectus of Course in Butter Making. Or better still, send the \$1.00 deposit TODAY and get the machine itself. It is the greatest invention since the cream separator was brought out. Free Prospectus tells all about Fayway Butter Clubs and the Fayway Course. (1)

THE BLANTON & McKAY CO., 415 Carr Street, Cincinnati, Ohio

Only \$2 Down
One Year to Pay!

\$24 Buys the New Butterfly Jr. No. 1. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 qts. per hour. Made also in four larger sizes up to 51-2 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog folder and "direct-from-factory" offer, buy from the manufacturer and save half.

ALBAUGH-DOVER CO.
2195 Marshall Blvd. CHICAGO

BOWSER SWEEP MILLS.

Different from all others, 24 or 2 horses. Grind Corn with shucks and all small grains. (Also make 10 sizes of belt mills).

FREE—Booklet on "Feeds and Manures" D.N.P. Bowser Co., South Bend, Ind.

It Pays to Feed Dried Beet Pulp

Increase production at a lower cost. Better try it, you can't lose. Write

T. F. Marston, Bay City, E.S., Mich.

Feed By-Products—A money saving proposition. Ask prices on Michigan Farmer Brand Oatmeal Seed Meal, highest grade manufacturers Linseed, Beet Pulp, Gluten, Brewers, Distillers, Salvage Grains, Corn, Corn Flakes, Corn Meal, Mill Feeds, Screenings, Oat Beans, Tankage, Meat Meal, Lump Rock Salt, Wholesale Flour, The Bartlett Co. Michigan's Largest Feed Shippers, Jackson, Mich.

CHEAP FEED For sheep and cattle feeders and dairymen. Salvage grain, oats, barley, wheat and corn, damaged in elevator fires. Bone dry and equal in feeding value to other grain. For sale in carlots direct to feeders. The best feeders in Michigan have been using it for years. Write at once for samples and prices, and information as to what experienced feeders think of it. "We save on your feed bill."

C. E. DINGWALL CO., Milwaukee, Wis.

APPLETON MFG. CO.
820 FARGO ST., BATAVIA, ILL.

MAKE GOOD

Grinders and have for Thirty Years but the new Ball Bearing, Fine Grinding, Light Running, Strong, Durable No. 12 is a Marvel. Grinds ear-corn or small grains, with Appleton or other 4 to 8 H.P. Gasoline or Kerosine Engines.

Silo Fillers, Huskers, Spreaders, Wind Mills, Towers, Wood Saws, Shellers, Jacks, Corn Pickers, Corn Snappers, Fodder Cutters.

GRINDERS

Dairy.

CONDUCTED BY COLON C. LILLIE.

HOW MANY COWS ON FORTY ACRES?

I am one of the 40-acre farmers and would like to know how many cows can be kept and raise the feed. It seems to me that when you buy it diminishes the profit considerable. Now I will state how my 40 acres are farmed. I aim to follow a three-year rotation; corn, oats and clover. I have the farm in six fields about six acres in a field, the balance being road, lane, buildings and truck patch, or garden. I am keeping four cows, raise the calves until two years of age by hiring them pastured. The second summer I keep one team. Everyone knows the team work on 40 acres is not very much. My team is a brood mare, a driving horse, and a two-year-old. None of these are able to do the work of a good heavy farm horse, although the three make a pretty good two-horse team. Raise one colt each year; that gives me a horse to spare each year and four two-year-old yearlings. I also hire pasture for colts. I plant corn on a clover sod, six acres of potatoes on a sod, sow six acres to oats after corn and potatoes. I have six acres of hay and six of pasture. This gives me a cash crop, also plenty of feed for to work in manures. In addition to this I take a field for corn and one for oats of some good neighbor. I have never bought any fertilizer. Have a berry patch that does nicely. Would like to hear through the Michigan Farmer if this could be bettered. My wife and myself do all the work, and my land is gaining in quality every year. The straw grows so large they lodge considerable. How can this be helped?

Nobody knows how many cows you can keep on 40 acres. It all depends, first on the man, and second on the "40." If it is good land and the right kind of a man, a good many cows can be kept on 40 acres of land. At first, probably one could not keep over ten, but as he develops his soil the number can be increased to 15, 25, or 30 cows. Mr. Dietrich, of Pennsylvania, kept 17 cows besides the young stock necessary to keep his herd up, on 12 acres of land, and he raised more forage crops, hay, silage and soiling crops than this amount of stock would eat, but he didn't attempt to grow any grain. He bought all his grain. Now, if Subscriber wants to raise the grain for these cows on his land, of course it will materially reduce the number of cows. But if he goes in dairying in an intensive way, tries to keep all the cows that he possibly can on 40 acres of land, he will find out that he can keep more cows on this area than the average man has any idea of.

If you want to keep all the cows you possibly can on 40 acres, the first thing to do is to cut out the pasture and build a silo. You can't afford to pasture cows with only 40 acres of land unless you have some waste land. Mr. Dietrich, besides the barn in which the cows were fed, only had a small exercise yard for them to run in, part at a time. They were in the stalls most of the time. They kept healthy, too. It is the same way with the young stock. The calves had box stalls and when they got to be yearlings and two-year-olds they were turned out each day in an exercise yard and then put back into their stalls, and they grew up to be healthy, vigorous animals. With a silo your corn crop will go twice as far as it will without. In other words, so far as feeding dairy cows is concerned, if you ripen the corn and husk it and feed the stalks and the dry corn, you lose half of the food value of the corn plant.

It is all right enough to raise potatoes on this 40 acres of land where you don't attempt to produce your grain ration. It might be the best thing in the world to raise potatoes in the rotation and sell these potatoes and buy grain, but you could not keep as many cows as you could if you would put the entire 40 into forage crops and buy the grain. But you might make just as much money if your land is adapted to potatoes by having a field of potatoes every year. Then you can have this money to buy grain with for the cows. If you buy nearly all the grain which your cattle consume then you are adding fertilizer to your fields and in a few years you will see the effect of this in a marked increase in crops, and you will raise much more forage crops, which in turn will enable you to keep an additional number of cows. The more cattle you keep, the more manure you will have, and the richer your farm will get, and where the limit is no man knows.

ICE CREAM VS. BUTTER.

Can you tell us what a plain ice cream must contain in order to pass the state law? Do you think it would be as profitable to make ice cream through the summer months for 65c a gallon as it would butter at 30c a pound? We have building equipped with all machinery necessary except freezers and packing tubs. We have to put up ice to make butter in summer. We can get market for all ice cream we can make in our nearest town five miles away. Please let us have your opinion on this matter.

Ionla Co.

G. E. H.

To one who has had no experience in the manufacture and the delivery of ice cream he would say at once that it would be much more profitable to manufacture the cream and butterfat into ice cream at 65 cents a gallon than it would to manufacture it into butter at 30 cents a pound. The state standard requires 10 per cent butter-fat in ice cream. Therefore, it would take less butter-fat to make a gallon of ice cream than it does to make a pound of butter, and in the first instance you get 65 cents for this butter-fat, and in the second 30 cents. Of course, there is a little more expense to the ice cream than the butter-fat, because it must have sugar and flavoring and something to give it greater body, but the most expensive part of it is the butter-fat. The cost of delivery, however, of ice cream is immense, more than most people figure on.

Really, I can hardly understand how a farmer could manufacture the product of his dairy on his farm into ice cream and deliver it in town and fill orders. The way the ice cream business is now days a man makes a contract with someone to furnish him with ice cream. The ice cream trade is a very irregular one. This week we have cold weather and not very much is used. The weather changes and becomes hot and you can scarcely get enough ice cream to supply your trade. Unless the manufacturer of ice cream has large reserve supplies of material it is impossible almost to supply the demand. If one could manufacture ice cream and take it to town and sell it as he would butter it would be a different thing, but it must be delivered when the customer wants it, and to deliver it five miles away would certainly be expensive. The amount of ice used in the manufacture and the keeping of ice cream is much greater than that used for making and keeping butter. I hardly see how a farmer could afford the delivery end of a proposition. During certain weather he could only make a portion of his cream into ice cream because he could not take on any more customers than he could furnish during the flush season unless he bought cream of somebody else. If one goes into the manufacturing business he ought to be located in town rather than five miles out. The maker does not make a contract with the retailer for a given amount of ice cream. The dealer does not know how much he can sell. Suppose you estimate that a man will use ten gallons of ice cream a day in fairly good weather. If the weather is rainy and cold he won't use half that. On public occasions when a great many people come to town in hot weather he might use five times that in one day. What would a poor farmer do? The only way the regular ice cream manufacturer could do is to have a source of supply held so he can draw upon it when the demand exceeds the ordinary amount made. If you could contract to have the dealer take a certain amount of ice cream every day so that you would know what you were going to do, it would be an entirely different proposition.

EXCAVATION FOR SILO.

I am planning on building a silo. While my land is a heavy clay I have to go three feet to get below the frost line. What I would like to know is, will it be all right to cement this three feet up well and use it for storing ensilage?

Bay Co.

W. H. S.

In a well drained soil it is perfectly practical to go three feet into the ground for the bottom of the silo. In wet clay ground when the silo is empty water will seep through and you will have to bail this out before you put in your ensilage every fall. Not only that but in wet ground the silage at the bottom of the silo will not be as good as it would if it was entirely above the ground. It is also some little work to get the silage out of this pit. It is a good deal easier to blow the silage three feet higher in the air. My advice would be to dig your trench three feet deep for your silo and keep the bottom of the silo up level with the top of the ground.

STRINGY OR ROPY MILK.

I have a Jersey cow due April 2. I am feeding silage twice a day, cornstalks and good mixed hay. Her milk is stringy after first day and the cream will not churn. It foams white in the churn. Can you tell me what to do? She is young to have her third calf. I am not feeding any grain at present. I feed salt twice daily.

Macomb Co.

F. E. W. S.

If the milk or cream is ropy or stringy it is an indication that you have ropy milk bacteria. If you have got these the only way to overcome them is to wash the cow's udder and teats with a weak solution of carbolic acid. Take pains to wash the ends of the teats carefully. If you can get a little of this solution into the end of each teat all the better. Wash your own hands in this solution before you milk. Wash the dairy utensils in a weak solution of carbolic acid because these bacteria are liable to lodge anywhere on the dairy utensils. If it is ropy milk bacteria this treatment will overcome them. The information given is not sufficient for me to state positively that it is ropy bacteria. (A weak solution of carbolic acid consists of one part of the carbolic acid to 125 parts of water. Containers should be marked "poison.")

Many people have trouble in cold weather in getting the butter to come. It is largely because they don't have the cream at the proper temperature when they churn, and besides the cream is frequently not ripened. You can churn sweet cream to get sweet cream butter but it takes longer to do it. You can also churn cream when it is quite cold and get butter, but it takes time to do it. If you will ripen the cream, that is, sour it, which you can do if you warm it up to 80 degrees and leave it over night, cool it down to 60 degrees and then churn, the probability is that you will not have very much trouble in getting the butter to come. Sometimes where one is making butter from one cow in this way it is almost impossible to get satisfactory results. Some people have scalded the milk; that is, sterilized it, put it in milk pans and set it on the stove until it is scalding hot, but they don't let it boil. Then they set it away in a cool place and allow the cream to rise. This sometimes makes the churning operation shorter. You can try first one and then the other of these remedies, and I believe one of them will help you out.

VALUE OF BEAN PODS COMPARED WITH TIMOTHY HAY.

What is good pea-bean haulm fodder worth per ton to feed cattle? How does mowed bean haulm compare in bulk to mowed hay? How much hay per week is enough for a 21-months old bull during a snow-bound winter?

Kent Co.

W. H.

One cannot answer a question like this without knowing the balance of the ration. If the cattle were to be fed entirely upon timothy hay or entirely upon bean pods then we could get at the definite value. But it depends largely upon the grain ration and the other foods in the ration as well. For instance, if you have oats and peas ground for a grain ration you can get along with timothy hay pretty well, although it is more deficient in protein than bean pods. On the other hand, if you only had corn meal in the grain ration your bean pods would be much better because bean pods are richer in protein.

The chemical analysis of bean pods proves them to be more valuable than timothy hay as a cattle feed because they are richer in protein. Protein is usually the element in which the average ration is deficient. But other things must be taken into consideration. Bean pods are liable to be injured by the weather, more so than hay, because they ripen at the time of the year when it is more difficult to cure them and they are usually drenched with rain before being housed and this lessens their food value. Bean straw where the beans are pulled as soon as they would do to pull, not when they get dead ripe and the leaves all fall off, and are properly cured, makes almost as good a food for cattle as clover. On the other hand, if they are left on the field until they are dead ripe and poorly cured, especially if they get wet two or three times, they are practically worthless. On the average, I think it would be fair to say that good bean straw is worth as much as timothy hay for cattle.

The second question I do not understand and cannot answer. If I can read the third question correctly, it wants to know how much it will take to feed a 20-month old animal. No one can tell this. Do you want the animal to make

a maximum growth or are you satisfied with simply a maintenance ration. The only safe rule to go by is to feed all the animal will eat up clean and get all the growth you possibly can. There is the most money in that. There is no money at all in a maintenance ration. Of roughage it will pay to feed all the animal will eat up clean without wasting.

COW IS PROBABLY ALL RIGHT.

We have been having trouble in churning. Last summer the butter would come in a few minutes but now after churning a long time the cream seems to gather on the top which we skim off and after adding cold water we are unable to work it so it will make butter. Our cow seems in good condition, eats well of almost anything placed before her. What can we do to overcome this difficulty?

Newaygo Co.

P. F.

From the description of the cow she seems to be in a normal healthy condition. I think probably that there is nothing the matter with her except that she is well along in the period of lactation. Nobody seems to be able to tell the reason but it seems to be a fact that where you make butter from a cow that is well along in the period of lactation there is generally more or less trouble in getting the butter to come, especially when this time comes during cold weather. With no particular facilities for making butter about the best time of the year is along in the month of June. The cows are on good grass pasture, give a good flow of milk, and the weather is not yet so warm but what the cream will rise very well, and when kept in a cool cellar it is just about the right temperature for churning, and everything is lovely. When it comes winter the cow gets no succulent food, is well along in the period of lactation, and the weather is too cold for butter making, all of which brings trouble. This is just about the history of the case every time. Give the cow succulent food, such as corn silage, sugar beets, mangel wurzels, potato peelings, if you have enough of them.

I am inclined to think, however, that the greatest trouble comes from handling the cream. Making butter from one cow in cold weather when she doesn't give very much, is an uncertain task. You have to keep the cream so long before you have enough of it to churn. The only way to do is to thoroughly mix the cream every time you skim the milk and keep it in a cool place until you get enough to churn. Then take the cream and put it in a tub of warm water and stir it until it gets to about 70 degrees in temperature, permitting it to stand at that temperature for 12 hours. This is called ripening the cream. Now put it in a tub of cold water and stir it thoroughly until you reduce the temperature to 60 degrees or below. Then churn.

WINTER ON THE DAIRY FARM.

(Continued from First Page).

ance of cleanliness. On this account cows should be brushed and cleaned twice or three times a week, particularly on those parts that are beyond the reach of the tongue. Whatever benefit may come from the cow licking herself when she is clean there is always more or less danger from that source if she is confined in the stable and has no way of cleaning herself except when turned out for water and exercise.

At certain times during the year and at certain stages of condition and health the hair comes off in great abundance. At such times, when the animals lick themselves, much of the hair gets into their stomachs, where it forms a mass that is likely to severely injure them. The damage is minimized by brushing the cows carefully. It should be done regularly, more especially along towards spring, for at this time there is more or less irritation that prompts them to lick themselves more persistently than at ordinary times. By brushing them in a careful manner this irritation is lessened and the falling hair is removed beyond the reach of their tongues.

Winter on the dairy farm is rich in fulfillment and opportunity. During the long winter evenings dairy farmers of the new faith are wont to read and study present, and prepare themselves for future problems. The principal activity of the farm is caring for the cows and young things. The stock of all ages change constantly and demand attention. They hold a peculiar allurements. It is, indeed, a zestless soul that can fail to warm with sympathy to the helpless creatures which an all-wise providence has given over to our care.

No Excuse for any Cow Owner Being Without a

DE LAVAL CREAM SEPARATOR

THERE is no reason why any cow owner who sells cream or makes butter should be without a separator and there can be no excuse for his not having the BEST separator.

ANY creameryman or experienced dairyman will tell you that a good cream separator will give you a great deal more and a great deal better cream or butter than you can produce with any gravity setting system.



THE DE LAVAL is acknowledged by creamerymen and the best posted dairymen the world over to be the "WORLD'S STANDARD" and the one and only separator that always accomplishes the best results possible and always gives satisfaction.

YOU cannot make the excuse that you can't afford to buy a De Laval, because it not only will save its cost over any gravity setting in six months and any other separator in a year but is sold either for cash or on such liberal terms that it will actually pay for itself.

WHY not start 1914 right in dairying? SEE and TRY a DE LAVAL NOW when you have plenty of time to investigate thoroughly. The nearest DE LAVAL agent will be glad to set up a machine for you and give you a free trial.

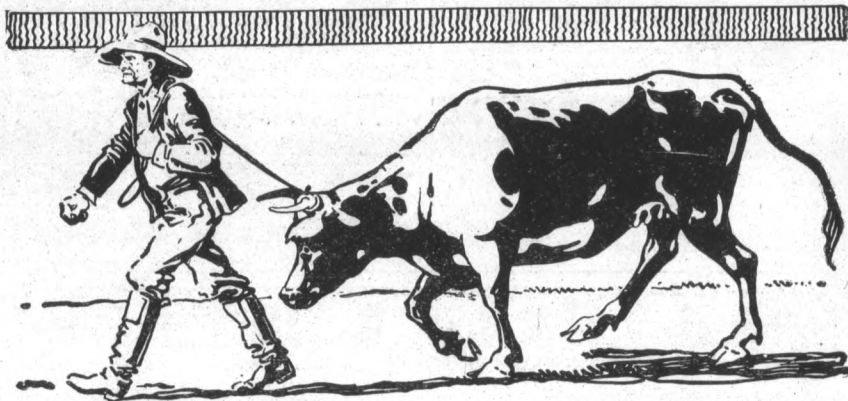
THE DE LAVAL SEPARATOR CO.

NEW YORK

CHICAGO

SAN FRANCISCO

SEATTLE



Don't Take Your "Backward Cows" to Market!

There is a lot of difference between a cow's *meat value* and her *milk value*. When her milk value falls below her meat value, something is wrong—she is a sick cow—and in most cases sensible treatment will restore her to the performance of her natural functions.

Kow-Kure is strictly a medicine for sick cows. It works on the digestive and genital organs and is an absolute cure and preventive of such troubles as Abortion, Retained Afterbirth, Barrenness, Bunches, Milk Fever, Scouring, Red Water and Lost Appetite.

Kow-Kure has genuine medicinal properties which tone up the cow's system, making it possible for her to thrive on Nature's food. The occasional use of **Kow-Kure** according to directions will improve the health and productiveness of the whole herd.

Sold by most feed dealers and druggists in 50c and \$1.00 packages. Ask your dealer for valuable free treatise, "Cow Diseases," or write us.

Dairy Association Co.
Lyndonville, Vt.

KOW-KURE



HARRIS Barn Equipment

makes barn work easier. Our Feed and Litter Carriers easily do the most thorough work in the shortest time. If you take pride in a clean, orderly stable, investigate our **Patented Stalls and Stanchions**. Write for our large, illustrated catalog. It fully describes everything, contains many valuable hints. Mailed Free! Please ask for it on a post card today.

The Harris Mfg. Co., Box 250 Salem, Ohio

When writing to advertisers please mention the Michigan Farmer

60 Years of Faithful Service to Satisfied Customers Is Our Record and We Guarantee Satisfaction

We offer the best of everything as Nurserymen, Florists and Seedsmen and at moderate prices.

Have for sale, hundreds of carloads of Fruit and Ornamental Trees, Shrubs, Hardy Roses, Vines, Bulbs, Seeds, etc.



Give us a trial. Write today for general catalog No. 2, 192 pages, or for No. 1, if a more detailed description of Fruit and Ornamental Trees is wanted. 1,200 acres, 46 greenhouses.

THE STORRS & HARRISON CO., Box 269, Painesville, Ohio

CHILDS' GIANT SUMMER COSMOS



is positively the most superb and beautiful garden flower known. Blooms profusely from June to Nov., each plant producing thousands of flowers, larger and more exquisite than the fall Cosmos, white, blush, pink, rose, crimson, etc. Thrives anywhere—finest cut flower for vases, etc. Mailed for 10 cts. per pkt., including 5 other leading Novelties free for trial, viz.: **Crego Pink**, largest and finest of all Asters.

Pansy, Orchid-bl., superb new orchid colors.
Primrose, New Giant White.
Petunia, Brilliant Beauty.
Snowball Tomato, new (white).

All these Six leading Seed Novelties for only 10 cts., together with Notes on Culture, Catalogue, Floral Hints, etc. Our Big Catalogue of Flower and Veg. Seeds, Bulbs, Plants and rare new Fruits free to all who apply. We are the largest growers in the world of Gladiolus, Cannas, Dahlias, Lilies, Iris, etc., and our stocks are best and cheapest.

JOHN LEWIS CHILDS, Floral Park, N. Y.

HEAVY CANVAS wagon covers 5x12 \$2.39 prepaid. Other sizes proportionate prices. Canvases for all purposes, Imperial Mfg. Co., 24 Tracy St., Buffalo, N. Y.

Kill These Pests



that ruin your fruit and destroy your trees, vines and plants. Get rid of scale, fungi and worms by spraying. **Stahl's Excelsior Orchard Enemies** (sent free) will tell you how to do it with easy working—and efficient—

Stahl's Excelsior Spraying Outfits

Send \$3 and we will ship outfit complete. Try 10 days and if found O. K. pay balance. If not return and we'll refund your money. Write today.

WM. STAHL SPRAYER CO.
Box 165. Quincy, Ill.

TREES

We grow our trees; guarantee them healthy, hardy and true; sell them at reasonable rates, direct from nursery; and deliver the size you pay for Catalogue.

GEO. A. SWEET
NURSERY CO.
60 Maple St.,
Danville, N. Y.

Horticulture.

Unusual Methods of Orcharding.

It is very seldom that one hears of anything that is real original in the methods of fruit culture. Most of our readings and hearings are a rehash of old methods with a few new view points of the individual which make them worth having or reading. When we hear of something which shows original thought and still sows common sense we sit up and take notice. Such was the talk of B. J. Case, of Sodus, N. Y., which was entitled "Apple Growing in New York," and given at the State Horticultural meeting at Traverse City.

The title is a misnomer as we are quite sure that it should have been "Apple Growing on the Farms of B. J. Case," as it is doubtful as to whether New York as a whole has anything new over Michigan in the business of growing of apples. Please note that in the above suggested title the word Farms is used. Mr. Case talks about a 25-acre orchard but he really has about a few hundred acres of fruit to take care of. He is also a member of a commission firm which he organized especially to make more easy the marketing of his own apples.

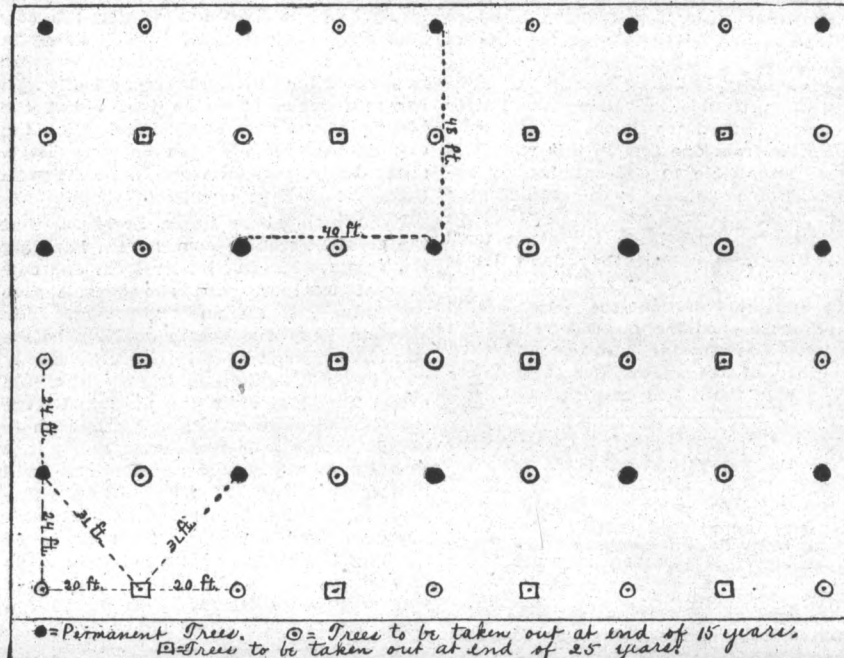
In opening his talk Mr. Case said that we were just in the infancy of the fruit growing business; that, in fact, we knew

ers who realizes this and works it out in practice.

By his system of setting the orchards ought to pay a profit at seven years of age. With the trees set 20x24 feet there are 90 trees to the acre. Between the ages of seven and 15 these trees ought to average five bushels per tree each year, making 450 bushels per acre. At 15 years of age half of the trees are cut out but between that age and 25 years the remaining ones ought to bear double the amount, and when the trees are thinned out to their permanent distances they bear the usual 450 bushels or more. It can be readily seen that by Mr. Case's method the orchard can be kept in bearing a normal crop per acre from the time it is seven years old.

Mr. Case's object in setting the trees 24 feet one way while only 20 the other is to make it easier to get through the orchard for spraying, cultivating, etc. when the trees begin to crowd.

Of course, in making this method a success pruning is a great factor. By the ordinary methods the trees would often crowd long before the time stated by Mr. Case. His method is to cut out the long limbs instead of the short ones and by doing this he has kept trees 60 years old



Mr. Case's System of Setting Trees.

but little of it yet. After he got through most of the hearers were convinced that they had learned much about the business while he was on the floor.

Method of Setting Trees.

Mr. Case's first departure from the accepted methods was in the distance he set the trees. He claimed that we were wasting space in setting the trees so far apart as we do. He has found that 20x24 feet was sufficient and at that distance the trees would not crowd until they were 15 years old. At that time he cuts out every other row diagonally, which would leave the trees about 31 feet apart. At this distance he figures that they will not crowd until they are 25 years old. Then every other tree in the remaining diagonal rows are taken out, which leaves the trees 40x48 feet apart. Mr. Case's reason for setting the trees so close and then thinning them out is to get an early profit out of the orchards. He claims that setting out the trees at the regular distance is a waste of ground early in the life of the orchard. The use of fillers of other varieties which ripen at a different time than the permanent trees and makes necessary their care in spraying and harvesting at different times of the year. He does not believe in the matter of cross-pollination and thinks that it is economy to set the varieties in solid blocks on account of the saving in work. Each variety needs its special care, different from that of the others, in the way of cultivation, spraying, harvesting, etc., to get the best results out of the orchard. He says it is very essential that we keep absolute control of the growth of the tree to bring the orchard to the highest efficiency. There is a distinct relation between the tree growth and the production, and Mr. Case is one of the few grow-

down so that they can be picked with a 24-foot ladder. He says that by the old methods of trimming out the small stuff there is a lot of space in the center of the tree which is of no use at all. His idea is to prune so as there will be no useless length of main limbs before the fruiting wood branches out. Where the growth of the wood is controlled this method is all right, but in some cases it would be rather hard to keep the trees in check as Mr. Case has done, and the pruning would check bearing and encourage wood growth.

Cultivation.

With reference to cultivation Mr. Case's methods are also original. He considers that the most critical time for the tree is just around blossoming time, and he says that the trees should get good feeding and care at that time. He starts cultivation in April and continues until about the tenth of June. Cultivating later than that is not necessary and often harmful as it will encourage wood growth too late. Mr. Case's object is to furnish the tree all of the moisture and plant food he can at this critical time and as soon as the seed is formed he stops. He considers this point in cultivation very important and also a factor in controlling the growth of the trees, as he claims that food made available after the apple starts growing will go to make wood.

(Continued next week.)

HORTICULTURAL STATE MEETING.

Don't forget the mid-winter meeting of the Michigan State Horticultural Society at Benton Harbor, Feb. 5-6. The meeting will be held in the auditorium of the First Baptist Church. Program will be published next week.

P-H-O-S-P-H-O-R-U-S

THE MASTER KEY TO PERMANENT AGRICULTURE

Phosphorus is so-called because its use gives largely increased yields of clover, alfalfa and other legumes, which secure nitrogen from the air. The acids formed by the decaying roots of these plants make available the potash which is abundant in most soils. Recorded experiments on all normal soils in the Eastern and Middle Western states show greater profits from the use of phosphorus than from any other element, or combination of elements.

DAYBREAK ROCK PHOSPHATE
13% Phosphorus, Ground 95% Through 10,000 Mesh Screen
Rock phosphate has been thoroughly investigated by the agricultural authorities and tested in the field by the leading Experiment Stations. It has proved to be the most profitable fertilizer on all soils deficient in Phosphorus, and the soil surveys show this deficiency in 90% of the cultivated land in the Eastern and Central states. A review of these experiments and much valuable general information about fertilizers is given in "The Farm That Won't Wear Out," by Dr. Cyril G. Hopkins. This book will be sent free to us for delivered prices on Rock phosphate, and state where you saw this ad.

FEDERAL CHEMICAL COMPANY,
Ground Rock Department COLUMBIA, TENN.

LILLIE'S SPECIAL No. 1 FERTILIZER



RAISE 70 BUSHELS OATS PER ACRE.

This is what Mr. I. C. Lindley, of Lupton, Mich., did on his six-acre field with an application of about 200 lbs. per acre of Lillie's Special No. 1 Fertilizer. Mr. Lindley more than doubled the average yield in Michigan.

It was not only a big yield but his oats weighed 37 lbs. to the bushel.

Insure your crops by using **BUFFALO BRANDS**. They are Soluble, Available and in perfect drilling condition. Every farmer should have a copy of our book

"Conservation of Soil Fertility"

free upon request. It will help solve your soil problems. Also write us for our pamphlet on *The Corn Crop*, useful memorandum book and attractive Calendar.

Agents wanted in unoccupied territory.

International Agricultural Corporation
BUFFALO FERTILIZER WORKS

600 Marine Bank Bldg.

BUFFALO, N. Y.

TROUBLE DEPARTMENT.

Trouble with Borers.

In a peach orchard six years old I have trouble with the borers. Have dug them out with wire and knife and then washed trunk of tree with undiluted lime-sulphur but it seems impossible to keep them out of the trees even after going over them thoroughly several times a year. Will you kindly give me the best remedy and information you can to rid the trees of this pest?

Hillsdale Co.

H. J. M.

The borer is sometimes very troublesome, especially on young thrifty growing trees, and it needs persistent thoroughness to keep them in check. Digging after them is by far the best way to get rid of them. A knife is preferred for this purpose as one can make a more sure job with it. In digging cut away all of the loose bark and gum, and follow the channel the borer has made until you get to the end of it. Then trim the wound down to good healthy wood and paint it over with pure white lead and raw linseed oil. The eggs of the borer are laid in spring on the bark of the tree near the ground. As a matter of prevention the trees can be mounded up with earth for a foot or more very early in spring. A cylinder of tough paper tied around the tree so as to extend up about 12 inches, and an inch or two below the ground, or a painting with a very thick paint of white lead and oil will do instead of the mound of earth if desired. By all means follow the suggestions regarding the digging for the borer and the trimming of the wound. The digging is best done in fall or very early in spring. Washes, such as lime-sulphur, are only partly successful.

For an Intended Orchard.

I am expecting to plant about 800 peaches, 200 apples, and 100 cherries. The land I expect to use is a light sandy soil which has been run for several years and is exhausted of its humus. It lies on the west side of a lake covering about a section. It has very good elevation and is well drained. Will fruits above named do well on this soil? Will they need fertilizer, and what kind? What varieties would you advise with the idea of planting the same number of trees each year for three years? Would you advise one or two-year-old tree and what size would be best?

St. Joseph Co.

E. R.

From your description the land will certainly need fertilizers. One of the best times to fertilize a young orchard is before it is set, and we would advise that the land be got in fairly good shape before setting. Nothing is better to bring up soils such as you describe than barnyard manure, or green manure, such as clover or vetch turned under. To make a start after being set is hard enough for a young tree in favorable conditions, and under unfavorable soil conditions there is likely to be a great loss of trees the first year.

The fruits mentioned will do well on such soils after they are brought to fertility. However, for peaches be sure that the location you have in mind is quite frost proof in spring. Location with reference to this is very important in peach growing.

It is preferable to plant the number of trees you have in mind all in one year, as it will make it easier to take care of them. Elberta is by far the best market peach and many set wholly to it. New Prolific is also good. If you have a good local market, Gold Drop will come handy as the housewives know this variety for canning purposes. There is no variety of cherry better than the Montmorency. If another variety is wanted the Richmond is good. For your soil the thirteenth growing varieties of apples are the best. Spy, Baldwin and R. I. Greening are good. Wagener, Duchess, Wealthy and like varieties are not advisable for such soils unless plenty of fertility can be given them, otherwise they will be stunted in size, and will tend to overbear.

We would prefer one-year-old trees of any kind of fruit if good sized trees can be had. A good medium sized two-year-old tree is also good. We do not especially like the extra large trees as it is generally hard to control the head of the tree on them.

Peaches in Sod.

I have about two acres of very hilly land I wish to set to peach trees. It has a heavy June grass sod on it now and is so hilly that it can not be plowed. Would it be profitable to plant peaches there; if so how would you go about it and what varieties would you consider best for market?

Calhoun Co.

E. O. P.

We can not recommend the setting of peaches on land which can not be worked as peaches need cultivation to bring best results. Apples can sometimes be grown under the sod mulch method but we have yet to see a success with peaches under this system.

HURST SPRAYERS ON FREE TRIAL

NO MONEY IN ADVANCE—NO BANK DEPOSIT—PAY AFTER IT HAS PAID FOR ITSELF.

LET US SEND YOU ANY OF THESE SPRAYERS—to try for 10 days, then if you buy, you can pay us cash or we'll wait till next fall for our money.—The extra profit will more than pay for it. We pay freight. LOWEST PRICES. HIGHEST QUALITY. 5 YEAR GUARANTEE.



Quality Sprayers for every purpose. Man Power and Horse Power for field and orchards. Barrel and Power Sprayers all give high pressure and produce vapor spray that kills scale, prevents blight and scab, and rids your crops of all fungus and insect pests. Hurst Sprayers have brass ball valves and all the working parts that come in contact with the solution are made of brass. Cyclone agitation insures an even distribution of the spraying materials and best results. These sprayers are made by practical men who know the needs of the fruit grower and farmer and know what a sprayer should do. Our 27 years' experience in the manufacture of sprayers, together with the capacity of our large factory, enable us to build the very best sprayers at the very lowest prices. We guarantee our sprayers for five full years and ship on free trial. That's evidence of quality. Get our big FREE BOOK—"Why, How and When To Spray"—Contains 74 illustrations of insect and fungus pests and gives remedy for each. Also shows 25 different styles of quality sprayers for every purpose. Write At Once



FREE You can get a Hurst Sprayer absolutely free if you are the first in your locality this season to send for one of our sprayers for trial. You need do no canvassing or soliciting. It will only take 15 minutes of your time. We do the work. When you get a sprayer from us you get the benefit of our 27 years' experience in manufacturing sprayers. Hurst Sprayers won the gold medal at the National Horticultural Congress spraying machine contest. Send us a postal or mark the attached coupon and mail it to us and we will send you our fine catalog, spraying guide, and will tell you how you can get a sprayer free. Don't delay, write us at once for our free sprayer proposition and save money.

H. L. HURST MFG. CO., 244 North St., Canton, Ohio.

Send me your Catalog, Spraying Guide and "special offer" on the sprayer marked with an X below.
Man-Power Potato and Orchard Sprayer.
Horse-Power Potato and Orchard Sprayer.
Fitz-All Barrel Sprayer.
Power Orchard Sprayer.

NAME.....
 ADDRESS.....

COUPON—
 Fill Out and
 Send today

Garden and Orchard
PAY BETTER
 If Properly Cared For! To take care of them means to spray. Spraying stands for bigger and better crops that bring higher prices.

Deming Spray Pumps
 will help you to do more of better spraying in less time. We make more than 20 kinds—a sprayer for every purpose. All are dependable and all do thorough work. For best results adopt the ideal combination—Deming Sprayers and Deming Nozzles. Most dealers sell both.

Spraying Guide FREE
 Tells when and how to spray. Catalog describes our complete line of sprayers. Ask for it on a postcard today.

The Deming Co.,
 216 Depot St.,
 Salem, Ohio

Deming Nozzles
 Famous Deming Nozzles

Spray
 The Morrill & Morley Way
 The ECLIPSE Spray Pump has been in service 20 years. Durable, efficient, economical. The U. S. Department of Agriculture uses it, and you can make it profitable in your orchard, vineyard or potato field. Catalog sent free, on request.

Morrill & Morley
 Mfg. Co., Box 6,
 Benton Harbor, Mich.

Eclipse Spray Pump

A FARMER'S GARDEN
 Helps his wife to plan her table in busy times. Saves work and worry, saves buying so much meat, gives better satisfaction to the help. A good garden will be almost impossible in your busy life without proper tools. They cost little and save much hard work.

IRON AGE WHEEL HOES AND DRILLS
 will sow, cultivate, ridge, furrow, etc., better than you can with old-fashioned tools and ten times quicker. A woman, boy or girl can do it. Can plant closer and work these hand tools while the horses rest. 38 combinations from which to choose at \$2.50 to \$12. One combined tool will do all of the work. Ask your dealer to show them and write us for booklet, "Gardening With Modern Tools" and "Iron Age Farm and Garden News" both free.

BATEMAN MFG. CO.
 Box 1042
 Glenloch, N. J.

GOOD SEEDS
BEST IN THE WORLD.
 CHEAPER THAN OTHERS; In addition we throw in a lot of new varieties extra with every order. OUR BIG FARM GARDEN SEED AND NURSERY CATALOGUE IS NOW READY FOR YOU. It is FREE. Write for it today; also send address of your friends and neighbors who buy seeds. Address

RATEKIN'S SEED HOUSE
 BOX 7
 SHENANDOAH, IOWA
 (LARGEST SEED CORN GROWERS IN THE WORLD)

BUSHEL CRATES—Reduced prices. Nailed up or knocked down. Write for sample and prices. O. S. BUSH, Mason, Mich.

Maple Syrup Makers
 The experience of thousands proves the!

Champion Evaporator
 The best for quality of syrup convenience and durability. It will save you labor, time and fuel. Material and satisfaction guaranteed.

Write for catalog, stating number of trees you tap.

Champion
 Evaporator Co.,
 Hudson, O.

GOOD SEEDS
BEST IN THE WORLD
 Prices Below All Others
 I will give you a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.

Big Catalog FREE
 Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.

R. H. SHUMWAY, Rockford, Illinois

MILLIONS of TREES
PLANTS, VINES, ROSES, ETC.
 The oldest, largest and most complete nursery in Michigan. Send for catalog. Prices reasonable.

I. E. ILGENFRITZ' SONS CO.
 The Monroe Nursery
 962 Front St., East
 MONROE, MICH.

Alfalfa Book
—FREE
 We are in the center of the alfalfa district and are the largest handlers of alfalfa in the U. S. We sell best grade seed at low price. Ask for Free Alfalfa Booklet. It gives complete instructions how to grow Alfalfa to insure enormous profits. Also big catalog of all Garden and Field Seeds Free.

Griswold Seed Co., 253 So. 10th St., Lincoln, Neb.

Field Seeds That Grow
 Alfalfa, Clovers and Grass Seeds; Seed Corn and Potatoes. All seeds are Nebraska Standard as to purity and germination. No state is more strict. Also vegetable and flower seeds, trees, etc. Big catalog free.

GERMAN NURSERIES AND SEED HOUSE
 29 Court Street
 Beatrice, Neb.

Guaranteed Fruit Plants
 Healthy, northern grown Strawberry, Raspberry, Blackberry, Currant and Grape plants—all covered by the following liberal guarantee—All plants guaranteed to be first class and true to name, packed to reach you in good growing condition (by express) and to please you, or your money back. You take no chances. Send for catalog today. O. A. D. Baldwin, R.R. 16, Bridgman, Mich.

CLOVER
 Now is the Time to Buy
 Prices lowest in years. Buy before advance and save money. Get our special low prices and free samples of our Iowa Grown New Crop Re-cleaned Tested Clover and Timothy Seed. Also Alfalfa, Alsike, Sweet Clover. All kinds grass seed. 76-page catalog free, quoting all field seeds. Save money by writing at once.

A. A. BERRY SEED CO., Box 131, CLARINDA, IOWA

TIMOTHY \$2.35
SAVE MONEY—Buy Direct from Grower.
 New re-cleaned Iowa Grown Timothy, free from weed seed. Guaranteed Satisfactory or money refunded. Write today. 76-page catalog and Free Samples. Low prices on Clover and all grass seeds. Write before advance.

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

SCARFF'S
 5000 bushel crop 1912 Tested and sure to grow. Finest quality. 20 leading varieties. Also Seed Oats, Barley, Grass Seed, Potatoes, etc. Samples on application. 1100 acres. Be sure to get our new catalog. Write today.

W. N. Scarff, Box 67, New Carlisle, O.

PLANT NORTHERN TREES
 Start with the best trees you can buy. We offer hardy, healthy, acclimated nursery stock of every kind. Grown in the heart of the Michigan Fruit Belt. Guaranteed true-to-name fruit trees and ornamentals at wholesale prices. Write To-Day for Catalog with Wholesale Prices FREE

It will save you money to investigate our special offers. Catalog shows what we sell. Send for it. A postal will do.

Celery City Nurseries, Box 112 Kalamazoo, Mich.

Knights' FRUIT
NONE BETTER PLANTS
 For over thirty years KNIGHT'S PLANTS have been making big money for our customers. This season we are offering a prize of \$100.00 IN GOLD FREE for the most productive strawberry patch. This contest is fully explained in our KNIGHT'S BOOK ON SMALL FRUITS. It's FREE. Write for a copy today before supply is exhausted.

DAVID KNIGHT & SON, Box 410, Sawyer, Mich.

Apple, Peach,
 Cherry and other Fruit Trees, Small Fruit Plants, Shrubs, Ornamental Trees and Roses. Hardy, vigorous trees from the famous Lake Shore regions of Northern Ohio. Send for Catalog. Address

T. B. WEST, Maple Bend Nursery.
 Lock Box 137, Perry, Ohio

Look! Read and Save Money
 We have a big Stock of Apple, Peach, Pear, Cherry, & Plum trees, at 3c & up. Shade trees, Berry plants, Roses, Shrubs, Etc. Seed Corn, Potatoes & Oats. We were formerly at Moscow, but have better facilities now to serve our Patrons, send for Catalogue.

ERNST NURSERIES, Box 1, Eaton, Ohio.

Strawberry Plants
 Guaranteed as good as grows at \$1.00 per 1000 and up. Catalogue FREE.

ALLEN BROTHERS, R. 9, Paw Paw, Mich.

ONION SEED \$1.00 PER LB.
 New Seed. Write for free samples for testing. Complete Garden Manual FREE.

FIELD SEED CO., Box 7, Shenandoah, Iowa.

WHOLESALE PRICES
 on Strawberry Plants. Many other varieties and garden roots at reasonable prices. Catalogue FREE. Write today to

A. A. WESTON & COMPANY, BRIDGMAN, MICHIGAN

"Strawberry Plants That Grow"
 Including the BEST of the FALL-BEARERS. Also RASPBERRY, BLACKBERRY, CURRANT and GRAPE PLANTS in assortment. CATALOG FREE.

C. E. WHITTEN, Box 14, Bridgman, Mich.

PURE FIELD SEEDS.
 Clover, Timothy, Alsike, Alfalfa and all kinds of Pure Field Seeds direct from producer to consumer. Free from noxious weeds. Ask for samples.

A. C. HOYT & CO., FOSTORIA, OHIO.

STRAWBERRY PLANTS 1000 FOR \$1—Quality guaranteed the equal of any plants. All kinds and everbearers listed. Also trees, raspberries, blackberries, shrubs, asparagus, tomato and cabbage plants. Catalog free. ALLEGAN NURSERY, Allegan, Mich.

SWEET CLOVER
 SEED, pure white and biennial yellow. Prices and circular how to grow it sent on request. Evergett Barton, Box 129, Falmouth, Ky.

PEACH TREES, Orchard Size, 4 & 5c each
 Elberta, etc. New catalog free of all kinds of nursery stock. W. A. ALLEN & SONS, Geneva, Ohio.

SWEET CLOVER Seed for Winter sowing, price "Free." John A. Sheehan, Falmouth, Ky. R. 4.

The Michigan Farmer

Established 1843.

The Lawrence Publishing Co.

Editors and Proprietors.

39 to 45 Congress St. West, Detroit, Michigan.
TELEPHONE MAIN 4525.

NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—604 Advertising Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.

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

I. R. WATERBURY.....Associate
O. E. YOUNG.....Editors.
BURT WERMUTH.....
F. A. WILKEN.....
ALTA LAWSON LITTELL.....

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

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.
Always send money by draft, postoffice money order,
registered letter or by express. We will not be re-
sponsible for money sent in letters. Address all com-
munications to, and make all drafts checks and post-
office orders payable to, the Lawrence Publishing Co.

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

RATES OF ADVERTISING.

40 cents per line agate type measurement, or \$5.60 per inch (14 agate lines per inch) each insertion. No advt. inserted for less than \$1.20 per insertion. No objectionable advertisements inserted at any price. Entered as second class matter at the Detroit, Michigan, postoffice. Copyright 1914.

DETROIT, JAN. 24, 1914.

CURRENT COMMENT.

This new slogan which, "Safety First," supposedly for the benefit of the public, is emblazoned on every prominent object in the equipment of the public service corporations which have adopted it, is made the subject of much facetious comment and many cheap jokes. Even if its application were limited to the traveling public this slogan would seem to be worthy of more serious consideration. Such, however, is not the case, since it is made the basis of a very complete organization by the corporations which have made it so prominent, as explained to The Farmer by the head of the transportation company which introduced it into Michigan. Each division of the service is made a unit of organized effort along this line, by the formation of a sort of council composed of representatives of the different departments or branches of the service on that division, as the operating department, the track department, the shops, the electrical department, the despatching service, the inspection service, the claim department, etc. Any man employed in any capacity in the service is authorized to make any criticism with regard to the operation of his own or any other department which in his judgment constitutes a hazard to the safety of any employee or of the traveling public, and offer any suggestions which may occur to him for the improvement of the service in this regard. These criticisms or suggestions are made through the representative of his department of the service on the division where he is employed, who reports them to the division council above mentioned, which council sits as a board of directors would sit at stated intervals for the consideration of such matters. These individual criticisms are there discussed from the standpoint of each department of the service represented in the council, and favorable or unfavorable action is taken upon them as determined by a majority of the membership of the council. This council in turn reports in favor of any changes which it may approve to a similar council composed of the heads of the departments of the system, which in turn considers and takes such action on the recommendations made as a majority of its members may determine upon.

In this way light is thrown into the obscure corners of every department of the service by the men who are closely in touch with and affected by the character of the service contributed by such department in a manner which would be impossible through the personal investigation of department or general superintendents. It also enables the correlation of the service as a whole with a view to promoting the safety of both employees and the public. Quite naturally the employees of any one department in a great transportation company come to look upon their department of the service as the important unit and to have less regard for the comfort, convenience or safety of the employees of any other department, or of the traveling public for that matter if they are in a department

which does not come in direct contact with that element. They come to regard their department of the service almost in the light of an independent business, a tendency which this "safety first" organization is designed to effectually overcome.

Undoubtedly organized effort of this kind is most beneficial to the corporations which have promoted it, as well as to their employees. But it is of no less benefit to the public on that account, and there can be no doubt that having this slogan constantly brought to his attention will make the ordinary person more careful of his own life and limbs than he would otherwise be. Just where this slogan originated or by whom it was first inaugurated is a matter of dispute among transportation men. But whether it was in the west, the south or the east, as claimed by the admirers of different transportation organizations, it is a movement worthy of admiration and emulation, not only by other transportation companies but by people in general, since there is opportunity to apply the principle to the conduct of every enterprise, whether private or public, and it is a good motto for the individual as well as the corporation to follow.

That superior education in professional lines adds materially to the earning power of the individual is a fact too patent to admit of discussion. Generally, however, this fact is construed to apply to technical, rather than general education, notwithstanding the fact that a fairly good general education is everywhere considered desirable, if not an absolutely essential as an equipment for a business life. Probably the need for and advantage of this kind of preparation has been less generally recognized in connection with farming than with any other line of business, and the curriculum of our high schools has been freely criticized on every hand as impractical, and calculated to fit the student to enter the college or university rather than for the serious duties of business life.

In this connection a farm survey recently made by the department of farm management of Cornell University in a typical New York agricultural county is enlightening. For the purpose of determining what influence, if any, the educational attainments of the farmers included in the survey had upon their labor income, the data collected from 1,303 farmers in seven townships of the county was classified with reference to their educational advantages. These records were grouped under three heads, viz., those who had attended a district school only; those who had attended high schools, normal or business schools or short courses in agriculture; and those who attended a college or university. Of the 1,303 farmers included in this classification, 1,007, or 77 per cent, were in the district school group, 280, or 22 per cent, in the high school group, and 16, or a fraction over one per cent, in the college or university group. A division in each class was made between owners and tenants, showing that as a class the owners fared better from an educational standpoint than the tenants, as only 17 per cent of the tenants had gone beyond the district school while 30 per cent of the owners had had better educational advantages. In applying the law of averages to determine the relation of educational advantages to the labor income of these farmers it was found that of the farm owners those who went only to the district school made an average labor income of only \$318, while the average labor income of the high school group was \$622 and of the college group \$847. It will thus be seen that in the comparison of these groups the labor income of the high school group averaged \$304 greater than that of the district school group. This would amount to more than five per cent interest on \$6,000, which would not be considered a mean legacy to leave a child, yet it would appear from this classification of results that its equivalent can be settled upon him in the way of high school educational advantages for a fraction of that sum. In the tenant class the variation was not so great, the average labor income of the district school group being \$407 as compared with \$473 for the high school group. In all classes the personal equation was an important factor in individual cases, showing that superior educational advantages do not constitute an insurance of profits in farming, yet when the law of averages was applied the results were

consistently in favor of those having the superior educational advantages. Forty-three per cent of the high school group made labor incomes of \$400 or less, while only five per cent of the district school group made labor incomes of \$1,000 or over, as compared with 20 per cent of the high school group making such incomes.

In order to get at the same question from another angle, 573 owners were classified to show the relation between education and labor income with an equal investment of capital. In this classification the college and high school group combined showed a larger labor income in every division of capital than did the district school group, the averages for the entire number showing a labor income for the high school group of \$699 compared with a similar income of \$488 for the district school group.

When these figures are considered in the light of the fact that the farmers in the high school group had received almost no technical agricultural instruction it would seem to be conclusively indicated that their better average success on the farm was due to the superior mental training which they had received, enabling them as a class to approach the problems confronting them with a more enquiring mind and solve them more wisely because of their better trained faculties. The application should be obvious, and cause the farmer who has concluded that it would not pay to send his boy to high school because he is going to be a farmer to give the matter more serious thought. Apparently it will pay from a purely financial standpoint, to say nothing of the personal satisfaction and benefit to the boy himself.

Growers who are holding their potato crop, or a portion of it, for the later market are always on the alert for information regarding the potatoes remaining in growers' and dealers' hands. Some estimates recently compiled by the Department of Agriculture will be of interest in this connection. These estimates indicate that about 42.1 per cent of the marketable supply of potatoes of the 1913 crop remained in the hands of farmers and 9.5 per cent in the hands of dealers on January 1, in the important potato-growing states. These figures compare with 39.8 and 9.8 per cent similarly estimated a year ago; 33.1 and 8.0 per cent two years ago; 40.2 and 10.9 per cent three years ago; and 41.2 per cent and 9.9 per cent four years ago. If, for the purpose of comparison, these percentages were applied to the estimates of total production, it would show total stocks of 123 million bushels on January 1, 1914, compared with 150 million a year ago, 91 million two years ago, 133 million three years ago, and 142 million four years ago.

An analysis of these figures indicates that a larger proportion of the crop remains in the hands of growers and that a smaller proportion is in the hands of dealers than is usual at this season of the year, due no doubt to the reluctance of dealers to stock up while the quarantine hearing was still pending. The statement issued by the Department also indicates that distribution has been very uneven, the holdings of potatoes being relatively large in most of the important producing states, including Michigan, and relatively small in the states of the central west which are both important potato producing and consuming states, a fact which is doubtless due to comparatively low production in those states due to the severity of last season's drought.

It is evident from this estimate that conservative marketing has been the rule in the states of large production, which has doubtless been a factor in the maintenance of an unusually even market. If the same policy is followed by growers throughout the balance of the season, the average returns to growers are likely to be higher than would be the case under a speculative condition of the market, with a correspondingly smaller likelihood of either boom prices or a glut in the market at the close of the marketing season.

In a recent comment Boys and Birds, mention was made of a press report in which it was alleged that the Kalamazoo Humane Society contemplated an active campaign for the repeal of the sparrow bounty law and the protection of the English sparrow on the ground that it was beneficial rather than a detriment, to agriculture. The secretary of the organization advises us that he was misquoted in the press report which incited our comment, and that the only interest which his society

has in the matter is the tendency of the law to incite the ruthless slaughter of birds by immature boys, which they believe to be most harmful, and that an informal discussion of the desirability of securing an amendment to the law which would prevent the payment of the bounty to immature boys was the only foundation for the original report. This position is more tenable and one which will incite greater sympathy among country people. The bird killing habit is one which should undoubtedly be discouraged in young boys, even though the destruction of the sparrow is desirable.

HAPPENINGS OF THE WEEK.

National.

A crew of 13 members was rescued Sunday from the schooner Fuller Palmer, which had been helpless for nearly a week 154 miles southeast of Cape Cod. The schooner went down shortly after the rescue was made. The storm which wrecked the Fuller Palmer also did great havoc along the entire New England coast. To date it is known that one steamer, seven schooners and one barge have been wrecked, while numerous other vessels have sustained much damage.

President Wilson reads his message dealing with anti-trust reform to Congress Tuesday. The message will give the position of the administration on the scope of legislation which it believes should be enacted promptly, not only to correct the evils in modern business, but also to offer positive assistance that will stimulate business enterprises and development.

A dam across Stony Creek, a branch of the Potomac River, broke last week and inundated the town of Schell, W. Va. Many of the other small towns along the banks of the creek and the northern branch of the Potomac have suffered considerable loss from the flood. Rumors are that several men were caught by the flood waters at Shaw, W. Va., 20 miles below Schell.

The grand jury selected to look into the methods employed in the Michigan Buggy Co., of Kalamazoo, Mich., have indicted three officials of the defunct concern.

There is a possibility of the copper strike of Michigan being extended to other fields of labor. This week the American Federation of Labor is assembled in Washington to consider a motion for a general strike in sympathy with the miners of this state and Colorado where strikes are now on. While it is generally believed that the council members of the Federation are against the proposal, still there is a possibility of its being accepted. The lower house of Congress has declined to take any action relative to the copper situation in this state, which decision has changed the activities of those interested in the investigation from the House to the United States Senate. It is believed, however, that no action will be taken by that body.

Governor Ferris last week restated, in a letter to President Wilson, the reports that constitutional government no longer existed in northern Michigan. In his communication, Governor Ferris stated that Michigan has protected the life and property of all her citizens and would continue to do so.

Should the 5,000 employees of the operating department of the Delaware & Hudson R. R. obey the order of the Grand Lodge officers who represent the engineers, firemen, conductors and trainmen of the railroad, they will walk out on strike this week.

The automobile show which opened in Detroit last Saturday is proving a decided success. The exhibits are large, and the attendance on the opening day was 60 per cent greater than at the opening of the 1913 show. In all it seems that the function will exceed all others in matters of interest to automobile users as well as furnishing entertainment for the general public.

Foreign.

Last week great suffering was caused in Southern Japan by the sudden activity of the volcano Sakura-Jima on the island of Sakura. Of the 12,000 inhabitants of the island, only 7,000 can be accounted for, it being the opinion that the other 5,000 perished. The country for a score of miles around the volcano is strewn with rocks and ashes, and lava fields extend for considerable distances from the crater. It is impossible to make estimates of the loss of property. Japan is also suffering from a famine in the northern districts of the country. This adds to the difficulty of handling the situation in the volcanic district. Relief is being sent from other countries.

The Mexican situation has changed little since a week ago. No important engagements have been fought. Followers of Huerta escaping across the American line when Ojinaga was taken by the rebels last week, are now wards of the United States government at Fort Bliss, where rations and clothing have been provided for the refugees.

Five nations have accepted the invitation of the United States government to join a naval procession to San Francisco by way of the Panama Canal next summer. These nations are the Argentine Republic, Great Britain, France, Germany and Portugal. Press reports indicate that Japan will also participate in the procession, and it is probable that many other nations will join later.

What is probably the worst storm that has visited western Europe in many years occurred there this past week. The temperature has ranged below zero, and in some places snow drifts are 18 feet deep. Much suffering is reported among the peasants of France, and a number of fatalities are recorded.

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

MONDAY, December 8th, I received the good news that I could have the free trip to Washington, and the Elk Rapids Savings Bank, true to its promise, gave me \$75, which met all my expenses and left a little surplus. To the bank I extend my most sincere thanks, and the journey will always be the greatest event in my life.

I started Tuesday morning on this never-to-be-forgotten trip, going to Grand Rapids and staying all night with my aunt, Mrs. Bert Beer. Wednesday I took the train for Lansing, and was met by Mrs. Dr. Mumford, who accompanied me through our state capitol, and then to East Lansing, where I met Mr. Rowland, my guide, who went with me. At 9:45 p. m. we took a sleeper on the Grand Trunk line, and when I awoke I was near Buffalo. We made no changes until we got to Philadelphia. We passed over the Alleghenies, where we saw some wonderful scenery. Little towns and hill-side farms are found here. They had to put on two engines and they had to dig in. Our train was a long one, I think it must have been forty rods long.

We arrived in Washington at 12:30 Thursday night and went to the Ebbitt hotel, where we registered and went to our room for a good rest until 7 o'clock. Then we came down to a large dining-room, where we had breakfast, which was the only meal we ate at the hotel, as it was cheaper at restaurants.

From there we all went to a waiting-room where Mr. Benson received us and gave us instructions for the day. Our first trip was to the Washington monument, each one waving the pennant of his own state. The monument is a marble shaft 555 feet high, which takes 900 steps to the top, and we took them. We could see all over the city. There are only four windows at the top. It would weaken the strength of the structure to have windows in it. Beautiful engraved memorial stones are set in the inner walls. The total cost of the monument has been \$1,300,000.

From here we went to the Bureau of Engraving, where they were making money and redeeming old bills, which are received at the rate of \$1,000,000 a day. Here are printed the government bonds and the paper money, postage stamps, etc. The engraving of the plates is not shown, and they are closely watched by day and are locked in the vaults at night. The paper used is silk-fibered paper, made at the Crane Mills in Massachusetts. They turn out on an average about \$4,000,000 a day. This money is deposited in the vaults of the treasury at 9:00 o'clock each morning, where it remains for two months before it is put into circulation. Women do all the counting of the money.

Then we went to the agricultural department and listened to a short address by Secretary Houston, and he shook hands with us. By this time we were hungry and had lunch at the restaurant. This was our first half-day of sight-seeing.

At 1:30 p. m. we started for Ft. Meyer, where we saw the cavalry drill. It was very interesting to see the wonderful things the horses could do at the different signals of the bugle.

Wednesday we went to the treasury building and saw the vaults and the gold in piles, but we could not get our hands on any of it. We also visited the Pan-American building. This was built by the twenty-one American nations, including the United States. The flags of each nation are there. It cost \$1,000,000 and was contributed by Andrew Carnegie and by the twenty-one nations. It is the most valuable building of its size in the city. It is a tie of friendship for these nations.

Then we had a two-hours' rubberneck automobile ride all over the city. Wednesday evening we took in the Y. M. C. A. and were entertained by Mr. Stanley. The beautiful Arlington cemetery, across the river in Virginia, was visited

In the Nation's Capital

Story of a two-weeks' Sight-Seeing Trip to Washington, D.C.,
by Grant Winters, of Antrim Co., Michigan's Champion Boy Corn Grower for Season of 1913.

next, where sleep the nation's dead to the number of 250,000. In one grave alone rests 2,111 unknown soldiers, which were gathered from the battlefield of Bull Run. Every gate leads to the Arlington house, which was once the home of Robert E. Lee. It is of white marble, and built in 1802 by Park Custis, son of Martha Washington. He was also the adopted son of George Washington. Washington delivered his sword and gun to him at his death with these words,

rooms. Here we had our pictures taken again. We returned to the city and went to the theater in the evening.

Sunday morning at nine o'clock six of us, with Mr. Stanley as guide, took a six-mile walk to Alexandria to the old church which Washington attended. Everything is in old colonial style. I think there are about ten steps to get up to the pulpit. We stayed to the services. We then went through Arlington again, and visited Reed's grave, who gave his



Most interesting of all was the visit to Beautiful Mt. Vernon.

"Thou shalt never draw blood unless in defense of your own country."

After supper we went to the congressional library, which now contains 4,500,000 volumes and nearly 100 miles of shelving. The reading room is very beautiful, with statues and pictures. It is 100 feet in diameter, 125 feet high.

Saturday morning we had our pictures taken in different places. But the most

life for an experiment to prove that mosquitoes convey yellow-fever germs.

Monday we visited the government printing office, where they print 35,000 papers an hour from beginning to finish, tied up in bundles by machinery.

We visited the government experiment farm. They had several acres of hot-houses. I must also mention the broncho ride the Illinois boy and I had. We rode



On a Tour of Inspection near the Close of the Growing Season.

wonderful afternoon was now to come, when we went to Mt. Vernon and saw Washington's old home and his tomb. When we passed by the tomb we all removed our hats. The mansion is ninety-six feet long and thirty feet wide and is furnished as he left it. It is of carved wood and painted white, and is owned by the Mount Vernon Ladies' Association, for which they paid \$200,000. We could not go into the rooms, but passed through the halls and could see into the

out of the city and to the Soldiers' Home dairy farm, where all kinds of cows are cared for.

Monday evening we were entertained at the Y. M. C. A. Tuesday we visited the capitol building. The entire length is 751 feet; width 350 feet. The walls are hung with beautiful paintings all through the interior. The senate chamber, house of representatives and supreme court room are all found here. We were in all of them while these bodies were in ses-

sion. We ate dinner in the restaurant in the capitol building. We were nearly all day in this building. In the evening we joined a theater party.

Wednesday afternoon we visited the White House and shook hands with Mrs. Wilson, but did not see the President, for he was sick in bed.

Thursday the National Museum was our objective point, where we saw wonderful things of modern times, and the old museum relics of olden times. Then the Corn Club meeting for plans for the next year was held. We also visited the bureau of fisheries, where we saw all kinds of fish, including seals, walrus and our own Michigan black bass that I fish for in Perch Lake.

Thursday afternoon we spent our time in the zoological park, where we saw animals of all kinds. This was one of my pleasantest afternoons.

Now came our last supper in the city and then homeward bound, but we missed one train and had to wait three and one-half hours for the next one. We came back on another road and had a five-minutes' view of Niagara Falls.

Saturday we were back in good old Michigan again, where Mr. Rowland took me around the Agricultural College farm and buildings. I came to Grand Rapids and stayed over Sunday and arrived in Elk Rapids Tuesday evening, making just two weeks of sight-seeing.

IDEAS OF DRESS AMONG DIFFERENT PEOPLES.

BY CHARLES H. CHESLEY.

The idea of providing a covering for his body was undoubtedly first suggested to primitive man by his need of some protection from the elements. He had felt the extremes of temperature and this awakened in his mind the scheme of using the skin of the beast he had slain to make for himself a coat. It would seem, therefore, that clothing was first used in a cold climate.

Dress as an ornamentation was probably a later product of man's evolution. Today all the tribes of the earth use some sort of dress or covering for some part of the body, although there are some in the interior of Africa and South America who can scarcely be said to wear clothing. A few tribes consider the proper fashion to be simply a nose ring with perhaps a girdle about the body. This is where nature is kind and the need of a covering has not been felt.

Dress of the modern form is a very modern product. Thus it was not until early in the nineteenth century that long trousers came into fashion. The style of clothing to which we are accustomed is now practically universal in Europe and America. In the Balkan states, however, other styles still prevail. The Greeks have a very picturesque costume but it is now seldom seen except among the peasantry and on gala occasions. A street scene in Athens is now very little different from one in Paris. In 1858, when Bayard Taylor spent the winter in the former city, and afterwards gave us a very entertaining account of his experiences and impressions, he found the national costume not uncommonly worn.

The Servians and Bulgarians also have a national dress which is more commonly seen than is that of the Greeks. The Dutch have a style considerably different from ours, while the Scotch are occasionally seen on their native heath dressed in the old Highland dress.

Across the Bosphorus, in Asia, oriental styles still prevail, the European dress not having supplanted the ancient styles. In Syria and Armenia, however, one will find many of the common people wearing "store clothes" made in America. These are taken home by men who have spent a few years in this country and have acquired what, back in the homeland, is a small fortune. Travelers in the Holy Land report that not infrequently they meet a man of much the same appear-



No. 6 COLUMBIA IGNITOR DRY CELL

Buy the Battery that's Built for Business

Costs No More—Lasts Longer

Columbia Patented Batteries have been doing good work for a quarter century. They're just right for your gas engine, bell, telephone, tractor, barn lights or auto. Used and sold all over the world. Easy to buy.

THE NATIONAL CARBON CO.
Cleveland, Ohio

Makes Bad Walking Good

Dri-Foot your shoes and your feet won't get wet in rain, snow or slush.

DRI-FOOT

Waterproofing for Shoes

makes leather water-tight and does away with the nuisance, awkwardness and unsightliness of rubbers. Good for black or tan, doesn't affect the polish and makes all shoes wear longer.

One or two applications last a season.

25 cents a can
In Canada 35c

Get it at your shoe dealer's. If he can't supply you, send us his name, and we will.

FITZ CHEMICAL CO.
673 Broad Street
Phillipsburg, N. J.

BETTER LIGHT

from any kerosene lamp or lantern than from electricity or gas. **WHITE FLAME BURNERS** give a soft white light equal to three ordinary lamps. **NO MANTLE TO BREAK.** Safe and Reliable. Delights every user. \$5 to \$15 daily. Everybody buys. Write quick for particulars and territory. Complete sample postpaid 35c., stamps or coin, 3 for \$1. Money back if not satisfactory. **White Flame Light Co., 39 Clark St., Grand Rapids, Mich.**

NOTICE!

Write for our price list today. We are catching Herring, Perch, Bayfish and other varieties daily. 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, WIS.

ST-STU-T-T-TERING

Let me tell you how I cured myself after 30 years of misery. Simple and effective method anybody can use at home. Write in confidence. **WALTER McDONNELL, Drawer F 630, Station F, Washington, D. C.**

MEN WANTED

We positively teach you at home by mail to earn \$25 to \$50 weekly as Chauffeur or Repairman. Students assisted to positions. Best system, lowest price. **MODELS FURNISHED. Write for Free Book.**

Practical Auto School, 66-W Beaver Street, New York.

LEARN AUCTIONEERING

Write for catalogue of World's Greatest School. Jones Nat'l School of Auctioneering, 14 N. Sacramento Blvd., Carey M. Jones, Pres., Chicago, Ill.

GOVERNMENT POSITIONS PAY BIG MONEY. Rural Carrier, Railway Mail, Post Office and other examinations everywhere soon. Get prepared by former U. S. Civil Service Sec. Examiner. Real course—the result of Government experience. Write now for booklet 87 with valuable information. **Paterson Civil Service School, Rochester, N. Y.**

WANTED—Agents to sell Power, Pump and Field Sprayers through Fruit and Potato districts of Michigan. Good lay out for active man. Address **Sprayers, cr. Michigan Farmer, Detroit, Mich.**

GOVERNMENT FARMERS WANTED Make \$125 monthly. Free living quarters. Write, **OZMENT, 17 E. St. Louis, Mo.**

WANTED—Railway Mail Clerks, Carriers and Rural Carriers. Examination soon. I conducted examinations. Trial examination free. Write, **OZMENT, 17 E. St. Louis.**

POSTS WHITE CEDAR POSTS in car lots. Write for prices on sizes wanted. **FULLER & HARRIS, Farwell, Michigan.**

ance, as the Syrian pack peddler so much in evidence in the country districts of our own land. To complete the illusion they usually find themselves addressed in understandable English. In Croatia and Dalamatia the same thing often happens, the returned native being a man of considerable consequence among his neighbors.

The wandering tribes of Arabia, and the Persians, in fact, Mohammedans in all parts of Asia and Africa, dress much alike, styles for men being the baggy trousers and jacket, with turban, fez or high lambskin hat. In these countries the women are very careful not to appear in public except with the face covered, it being considered immodest to do so. They are not so careful about the lower limbs, however, and often appear in public with the skirts or bloomers reaching only to the knees. The prevailing fashion among the Persians is a skirt somewhat resembling those worn by ballet dancers.

The women of India dress rather simply, their costume consisting of a large cloth, often ten feet long, which is bound about the waist and lower part of the body, reaching nearly to the feet. It is also brought over the shoulders to cover the upper part of the body, with one end left loose to serve as a head covering. When appearing in public the face is always covered with a veil except among the poorest classes. Men of the lower casts in India dress much like the women, and the laborers may often be seen at their work attired in a simple loin cloth. The high class men have adopted and adapted many English styles and customs.

Almost everyone has seen the costume of the Chinese, the "chink" laundryman, with silk pajamas and jacket, being found in almost every city and town in America. Chinese women, who are seldom seen in this country, dress very much the same. Loose slippers are worn on the feet. The Korean wears a jacket much larger than that affected by his neighbors, reaching nearly to his feet. Japanese wear kimonos with wide

sleeves, under which may be several richly-embroidered garments of silk.

The dress of today among all peoples is largely a matter of adornment. We are accustomed to think of women as the more extravagant in this respect, yet history teaches us that such is not true. It was not many years ago that English gentlemen carried the idea to such an extent that strict laws regulating dress and adornment were passed by parliament. We find in the work of the great writers of the fourteenth and fifteenth centuries many allusions to this extravagance. The poet Chaucer bitterly criticized the prevailing fashions and fopperies of his time, while a number of others alluded to the same thing in words of derision.

In all ages and among all peoples there has usually been some distinction between the dress of the men and women, but only among Europeans and their American descendants does this take the form of trousers and skirts. Orientals dress quite the opposite. Primitive tribes of Africa and South America dress today much as our prehistoric ancestors must have dressed. They have probably developed a little along the line of ornamentation. Just as the male bird of the turkey family loves to spread his feathers and show his beauties to best advantage before the females, so the savage ornaments his person for the same reason. Personal adornment, therefore, seems to have been first thought of by the men. It is only as civilization advances that women begin to ornament their persons.

By reading the works of the great writers of the past we are able to form pretty correct ideas as to how far the follies and foibles of dress have carried some nations. Thus in our own country, in the days of the colonies, it was thought necessary to pass strict laws against excess in this direction, and from reading the newspapers of our own time we must naturally conclude that many of the present vagaries of dress will go down into history on a par with the foibles of the reign of Edward III of England.

Unexpected Guests.

By ERNEST ELWOOD STANFORD.

MARY CHANNING stepped briskly about her tidy kitchen, her brow slightly puckered with anxiety. It was but the fifth week of her married life, and some of his relatives—city relatives—whom she had never met, were coming that very morning for a week's stay in the cosy farmhouse under the maples. Therefore the anxious pucker, and therefore the festive preparations in which she was engaged. The pound-cake had been baked the day before with success beyond her fondest hopes; the chickens were ready to pop into the oven at the proper moment; the vegetables were peeled, and everything was going finely. On the back of the stove was a large brass kettle of black dye, in which a woolen skirt was simmering. A neighbor, whose husband had suddenly died, had sent the garment over earlier in the morning, with an urgent request that Mary, who had much experience in dress-making and altering, would dye it and return it in time for the funeral next day. Though the request could scarcely have come at a more inopportune time, Mary Channing had not only cheerfully undertaken the task, but had volunteered to bake half a dozen much-needed loaves of bread, as she knew her friend would have little time to cook for such of the funeral guests as would be obliged to stay over night.

John, her husband, had just driven off in the new two-seater, and would bring Uncle James and Aunt Isabel from the distant depot just in time for the all-important first dinner—if the train were not late. The bread, just mixed, stood in a covered rising-pan on the table, and, before putting it away to rise, Mary paused for a moment to make a rapid mental calculation of the work yet to be done. First, the skirt must be taken out—

Suddenly she heard shuffling steps on the piazza outside; then the door opened, and a rough, bearded face peered in.

"Mercy!" thought Mary. "A tramp! If I had only locked that door!"

But with a brave face, and a flash in her black eyes, she ordered: "Go away, at once! I haven't anything for you. Hurry, or I'll call the dog!"

But the tramp merely grinned insolently, as if he knew the dog to be wholly imaginary, and stepped inside, followed by a companion, whom Mary had not at first seen. The first intruder was a tall, bony man, with bloodshot eyes, coarse, heavy features and ragged, stubby beard. The second man was hardly more than a boy, with unkempt reddish hair, watery blue eyes, and a retreating chin. Both appeared to be total strangers to soap and water, and Mary noticed a strong odor of whiskey.

After stepping inside, the older tramp locked the door, put the key in his pocket, and then turned to Mary, his insolent grin broadening.

"We saw yer man drivin' off," he observed, "an' we thought yer might be lonesome. Bakin' day, eh? Got anythin' good ter eat?"

Mary did not answer, but, turning quickly, made a dash for the dining-room door, hoping to bolt it after her and escape to a nearby neighbor's. But her unwelcome guest was too quick for her, and, seizing her by the shoulder, he flung her roughly back against the table.

"None o' that!" he growled. "Behave yerself and keep still, and yer won't get hurt, but if yer don't—" He scowled fiercely, and, drawing a revolver from his pocket, dropped it on the table. Then, taking a chair, he seated himself, pulled the bread pan to him, took off the cover and inspected the contents. With a snort of disgust he flung the cover on the floor.

"Billy," he ordered, speaking to his comrade, "you look around an' find me somethin' that's cooked. I'm hungry."

Billy obediently entered the pantry, whence he brought forth a plate of cold meat and a loaf of bread; and, after further search, a pat of butter, a pitcher of milk, two pies, and, worse than all, the precious pound-cake. Both ate wolfishly, and seasoned their meal with draughts from an evil-looking bottle. Mary watched them silently, her head in a whirl. What might they not do, under the influence of that liquor? If John would only come! But it was useless to expect him for an hour and a half, at least. What should she do? Plan after

A QUESTION.

BY FLOY SCHOONMAKER ARMSTRONG.

Old Aunt Polly Jane was a bright, cheery soul.

Just one of the old-fashioned kind; Her neighbors and friends were aware of her worth.

But thought her of whimsical mind.

"I never believe only just about half."

Of all that I hear," she would say;

"And never repeat any gossip at all, I just can't—I'm funny that way."

Old Aunt Polly Jane has been dead twenty years.

But most of her friends linger yet;

And many a one of her whimsical words

We find mighty hard to forget.

When gossip grows rampant, and hearsays arise—

The same as they did in her day—

We ask if it wouldn't be better for all

If more folks were "funny that way."

plan flashed through her anxious mind, but none seemed possible of execution. She dare not make another break for liberty; if she screamed for help she would scarcely be heard, and the consequences would certainly be immediate and most unpleasant. If she could but get that revolver! With that in her hands, she felt that she could completely control the situation. She certainly did not wish to shoot anybody, but, from her knowledge of the cowardly nature of tramps in general, she was sure that the actual use of the weapon would be unnecessary. But both men were between her and the pistol, which seemed as unattainable as the North Pole.

Finally the older tramp tipped his chair back against the wall, placed his feet on the table among the dishes, and remarked: "Billy, go git that clothesline outer the back yard and tie the woman up. Then look around and see if yer can't find some money or somethin' else wuth havin'. I'll stay here an' keep an eye on the road."

Mary groaned inwardly. There was but little money in the house, but upstairs on the bureau, ready to put on when she changed her dress to greet the expected guests, lay her cherished gold watch—the watch that had been her mother's. Her alarm must have shown in her face, for the speaker, who had watched her sharply to note the effect of his words, chuckled grimly.

"Hurry up, Billy," he commanded, "we can't stay here all day." Billy departed, staggering slightly, and leaving the door open. Then, to Mary, with an insolent leer, the tramp continued, "Come, dear, tell us where the stuff is, that's a good girl. We'll find it anyway, ye know, and yer might as well speak an' save us all the trouble." Then, as she did not answer: "Come, hurry up, an' I'll give ye a sweet kiss. If ye don't—" He scowled fiercely—"we'll set ye on the hot stove!"

Mary's cheeks blanched, but her eyes flashed fire.

"You miserable coward!" she cried.

Her tormentor chuckled, and, glancing out of the window and noting that his comrade was already busy with the clothesline, replied: "Gettin' mad, are ye? Well, we'll see, we'll see."

Then he reached into his pocket, and, pulling out a dirty plug of tobacco, bit off a large section. In replacing the remnant, it slipped from his clumsy fingers and fell to the floor. With an oath, he bent down to seize it, without removing his feet from the table. Mary saw a desperate chance. With a bound, she grasped the pan of dough, inverted it over his head, and, with every ounce of her strength, gave the unsteady chair a violent push. Tramp, bread, and chair went to the floor with a resounding crash. Mary sprang quickly past the table, catching up the revolver as she went. Blinded and partly smothered by the sticky mass of dough, the fallen man rolled under the table instead of away from it, and, trying to rise, struck his head against the edge so violently that table, oilcloth, dishes, and the remaining food were overthrown, while he fell back heavily upon the floor, apparently stunned.

Attracted by the noise, Billy came running in, dragging the clothesline after him. He stopped in the doorway and stared, open-mouthed, at the amazing scene before him.

"Stop right there," cried Mary, "or I'll shoot!" Ignoring the threat he started toward her. In desperation, Mary shut her eyes and pulled the trigger. Only a dull snap followed. The revolver was empty!

Scarcely had she realized this when he grasped her by the arm. With a mighty effort, she freed herself and slipped by him. Unable to check himself, the half drunken man staggered forward, stum-

bled over the wreckage and fell prostrate. Now was Mary's chance to escape. But her blood was up. If she fled, they might get that watch yet, and be off before they could be captured. She grasped a dipper, flew to the stove, filled it at the brass kettle, and menaced the fallen pair with boiling black dye.

"Look out!" she cried. "If you try to get up I'll scald you both!"

The older tramp still seemed stupefied; the younger started to rise, but at her command thought better of it, and, sitting up, stared at her in tipsy alarm. Clearly he was not very dangerous, but the other might recover his wits at any moment and cause trouble.

"Take that clothesline and tie that man up!" ordered Mary.

The young fellow did not seem inclined to obey.

"We—er—we didn't mean nothin'," he remonstrated feebly. "We was just foolin'."

"I'm not fooling!" snapped Mary, with a stamp of her foot. "I mean something! You do as I say, or—" she drew back her arm threateningly.

"Yes—yes—yes—I'll do it," stammered the cowardly wretch in terror. "He ain't no friend of mine, nohow."

And, carefully directed by his captor, he proceeded to make a sort of chrysalis of his dough-bedaubed companion by wrapping him in a hundred feet of clothesline, knotted at intervals. At first the victim made no resistance, but as his wits cleared he began to struggle, and cursed both Mary and his partner roundly when his efforts proved unavailing. He desisted sullenly, when a large spatter of hot dye fell on his hand, accompanied by the promise that, if he didn't stop that vile language, he'd get the whole dipperful in his mouth.

"Now, Billy, if that's your name," re-

marked Mary, when the task was finished, "you drag him out on the piazza out of the way, and don't you dare to try to run, or it'll be the worse for you." And, replenishing the dipper, she followed close at his heels while the command was obeyed.

"Now," she continued, as they returned to the kitchen, "take that rag from the sink and wipe up that stuff—" pointing to the whiskey bottle, which had been broken in the melee—"and scrape up the dough and pick up the broken glass and crockery and right up the table."

And, with an eye always on the threatening dipper, which Mary waved in his direction like a magic wand, the thoroughly cowed Billy meekly did as he was bid.

"There!" sighed Mary, when the task was done. "I've a great mind to make you help me get dinner, but you're too dirty and too drunk. Go over and stand in that corner, with your arms folded behind you, and don't let me see you move, or hear a word from you!"

When John and his relatives arrived, half an hour later, they were greeted by an overwrought young woman, who promptly collapsed in her husband's arms when the danger was over. As for the unexpected guests, they spent that night, and many nights thereafter, in the county jail. Uncle James and Aunt Isabel partook of a very "picked up" cold dinner, with no pound-cake or roast chicken, but the lack of these dainties did not prejudice them in the least against their new niece. And Aunt Isabel, who had not wholly forgotten the housewife's acts which she had been obliged to practice in her younger and less prosperous days, insisted on borrowing an apron and in helping in the finishing of the skirt and the stirring up of another pan of bread for the bereaved neighbor.

"THY CREED OF LOVE."

BY RALPH WOODWORTH.

Dear God, help me to live each day,
Free from all selfishness and wrong;
Give me the grace to tread alway
The primrose path of peace and song;
And thus my prayer to Thee above,
Teach me Thy creed of love.

May it be said, when I depart
This life for that mysterious shore,
His was a tender loving heart.
Dear Lord, I ask for nothing more.
So, looking from Thy courts above,
Teach me Thy creed of love.

What good can I accomplish here
If I defraud, if I oppress;
If in my heart I have not cheer
And sympathy and tenderness?
And so I pray to heaven above,
Bestow Thy creed of love.

THE CHEERFUL CHICKADEE.

BY MRS. JEFF. DAVIS.

Jerry had been shut indoors for a long time. He had been very ill, and now that he was getting better his chief amusement was sitting by the window, watching the chickadees hopping about in the snow. His mother let him spread bread crumbs on the window sill, and these sociable little, black-capped birds, dressed in gray, would eat their "free lunch" with Jerry sitting on the other side of the glass sash. But the least move on his side would send them flying away to perch on the bare limbs of the big oak.

"I wish I knew more about the chickadees," Jerry said to his mother one morning. "How can they live and be so cheerful when the ground is covered with snow, and there is so little food to be had?"

Just then the door-bell rang—tinkle, tinkle, tinkle. Somebody was in a hurry, and mother went to answer it.

"Oh, Aunt Mira! We are so glad you've come!" Jerry exclaimed, as a pretty young lady entered the room. "I was asking mother about the chickadees, and you can tell us all about them."

"I'm glad you are becoming interested in birds," said Aunt Mira, who was devoting her spare time to nature study. "I'll give you an object lesson, right now, that will teach you something concerning the chickadee's character."

She went to the window and raised the sash a little so the birds could hear, then began to imitate the chickadee's whistle. The birds across the lawn stopped, as if to listen. She continued to whistle to them, and they began to answer. Finally, curiosity got the better of caution, and several came fluttering toward the window to find out if a strange chickadee was at their feeding place.

"That was splendid, Aunt Mira!" Jerry cried. "Do teach me to call the chickadees."

"Indeed, I shall be glad to do so, and

there are several other bird calls I can teach to you."

"I was asking mother, when you came in, how the chickadee is able to stand the winter when food is so scarce?"

"He is provided with a coat of fat under his gray feathers," Aunt Mira answered; "a hardy constitution and a sunny disposition keep him from minding the cold so long as he can find a fat grub, or a nest of insect eggs to stay his stomach and supply his layer of fat. When the mercury drops lowest, his spirits seem to go up. Dangling on the cone of some tall pine tree, standing on an outstretched twig, or hanging, with his black-capped head downward, he carefully inspects the rough bark for insect tenants and sings his thanks between bites. The orchards, where chickadees, titmice, nuthatches and ringlets have dined all winter, will contain few worm-eaten apples next summer."

"I'm glad to know that," said Jerry. "I will try to get as many as possible to stay in our orchard this winter."

"Every farmer would be not only humane, but very wise, if he hung in the orchard and lawn some marrow bones with suet and meat attached," Aunt Mira continued, "or some suet enclosed in a wire netting with bits of chopped peanuts pressed into it. The chickadees would also be thankful for some pork rinds put here and there."

"That is very interesting, and I am going to ask mother about carrying out some of your plans for helping the winter birds," said Jerry. "I would like to know what becomes of the chickadees in the summer, Aunt Mira."

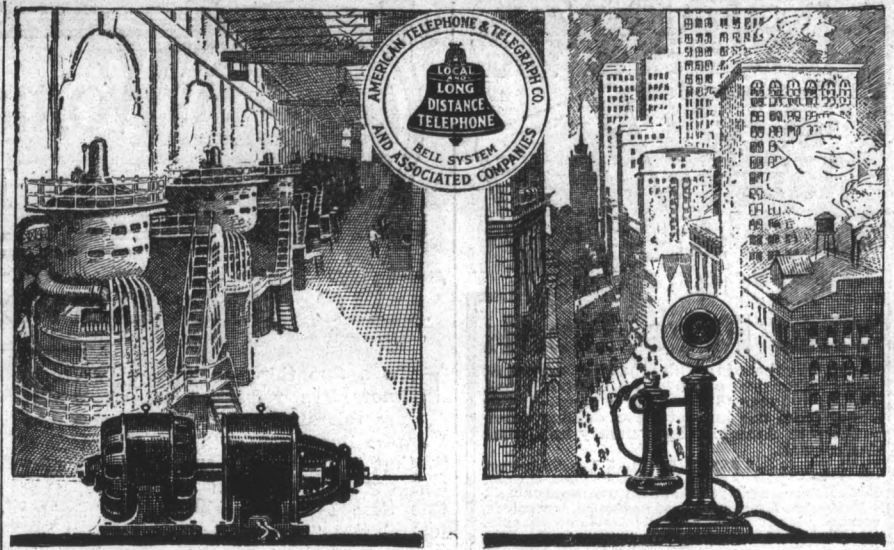
"At the approach of warm weather chickadees retire to the woods or shady swamps where insects are plentiful, give up their flocking life and live in pairs," Aunt Mira explained.

"Aunt Mira," said Jerry, "now that we have come to the country to stay, I want you to teach me to study the habits of birds. I will soon be well, and I want to go with you on your tramps through the woods. I believe I'll soon be as interested in nature study as you are."

"I shall be delighted to teach you anything I have found out about our friends, the birds, but we need not wait until you are able to go with me tramping. There are many things you can learn from books, and I can tell you of their habits and peculiarities, so that you will be better prepared to greet them when they appear in the spring."

DON'T WAIT

Until your paper has stopped before sending your renewal to The Michigan Farmer. Send now, 50 cents for one year, \$1.00 for two years, \$1.25 for three years or \$2.00 for five years.



The Energizer of Business

IN a metropolitan power-house there must be generators large enough to furnish millions of lights and provide electrical current for thousands of cars and factories.

Each monster machine with the power of tens of thousands of horses is energized by an unobtrusive little dynamo, which is technically known as an "exciter."

This exciter by its electric impulse through all the coils of the generator

brings the whole mechanism into life and activity.

A similar service is performed for the great agencies of business and industry by the telephones of the Bell System. They carry the currents of communication everywhere to energize our intricate social and business mechanism.

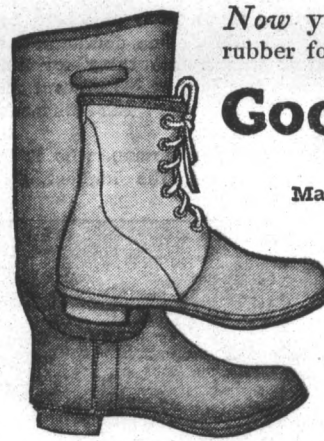
United for universal service, Bell Telephones give maximum efficiency to the big generators of production and commerce.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service



Now you have a real guide in buying rubber footwear—Look for the Red Top—and get

Goodrich "HIPRESS" Rubber Footwear

Made in Boots and Lumberman's Shoes—Brown or White

—the same tough tire tread stock, the same unit construction, high pressure "Hipress" process by which the world-famous Goodrich Automobile Tires are made.

They can't leak, can't peel, can't come apart. This new process sets a new standard in rubber boot and shoe making.

Comfortable?—Goodrich "Hipress" rubber boots and shoes are shaped to the human foot in action.

Handsome?—the best looking footwear you ever saw—not black, but a rich brown or cream white, always with the Red Top.

See these Goodrich "Hipress" Boots and Lumberman's Shoes at your dealer's. If he hasn't them yet, send his name when you write for booklet 18-B.

The B. F. Goodrich Co.



Factories: Akron, Ohio

Everything that's Best in Rubber



There is nothing in Goodrich Advertising that isn't in Goodrich Goods

L. L. POATES & CO.'S COMPLETE ATLAS of The WORLD

ACCURATE—CONCISE—RELIABLE. Size of Atlas 7 inches by 10 inches, with 139 pages of new maps, each with all up-to-the-minute corrections and additions. Each map occupies two pages, is printed in six colors. There are maps of each state in the United States, the United States Possessions, all Provinces in Canada and every other country in the world. An invaluable aid for the library of well-read men and women; especially valuable as a reference book for superintendents, principals, teachers and pupils. \$1.50 in cloth; \$2 in leather. Carriage paid. BIBLE ATLAS with maps and 120 pages of text matter, \$1.50, carriage paid. As a special offer we will send free with all purchases of above, a copy of our Gazetteer of the World, full of maps and useful information. Tell your friends and order today.

L. L. POATES PUBLISHING CO.,

German Herold Building,

NEW YORK CITY

95 cents



5 YEAR GUARANTEE

Railroad Watch

To advertise our business, make new friends and introduce our catalogue of Watch bargains we will send this elegant Railroad watch by mail post paid for ONLY 95 CENTS. Gentlemen's size, full nickel silver plated case, locomotive on dial, lever movement, stem wind and stem set, a perfect timekeeper and fully guaranteed for 5 years. Send this advertisement to us with 95 CENTS and watch will be sent by return mail post paid. Satisfaction guaranteed or money refunded. Send 95c today. Address R. E. CHALMERS & CO., 538 So. Dearborn St., CHICAGO.

A Kalamazoo Direct to You And Gas Stoves Too Quality Ranges Bargain Prices

This Free Book

shows why there is a Kalamazoo customer at every other post office in the United States. Don't pay fat profits to local dealers. Order direct from the largest direct dealing stove makers in America. Save nearly half what dealers ask.

30 Days' FREE Trial Year's approval test—\$100,000 Bank Bond—freight prepaid. Easy payments or cash. Kalamazoo Ranges are most handsome, convenient, economical and durable, with all latest improvements. One of them is just your style at your price. Free Book and low factory price prove it. Free Trial and Guarantee make you sure. Write for book now anyway to protect yourself against poor quality or high prices elsewhere. Ask for Catalog No. 113.

Kalamazoo Stove Co., Mrs., Kalamazoo, Mich.
We make a full line of Stoves, Ranges, Gas Stoves and Furnaces. We have three catalogs. Please ask for the one you want.

'No Hill Too Steep—No Sand Too Deep'

Jackson
\$1385
Complete
"Olympic Forty"

Write for catalog of three great Jackson models, \$1385 to \$2150.

JACKSON AUTOMOBILE CO.
1508 East Main Street JACKSON, MICH.
978 Woodward Ave., Detroit, Mich.

HAVE BETTER LIGHT

NO SMOKE
NO SMELL

WITH THE "PERFECT" BURNER
Wonderful new invention—turns dim red flame into big brilliant, white, steady light. As good as gas or electricity. Works on any lamp. No smoke, no smell. Makes one lamp do work of three. Prevents eye strain. Saves oil. Fine for all night use. Guaranteed. Price 20c. for No. 1 or No. 2 lamp, or No. 2 Gold Blast lantern, by mail prepaid. Agents Wanted. Write quick. Perfect Burner Co. 673 Spitzer Bldg. Toledo, O.

"RANGER" BICYCLES
Have imported roller chains, sprockets and pedals. New Departure Coaster-Broke and Hubs. Puncture Proof Tires; highest grade equipment and many advanced features possessed by no other wheels. Guaranteed for 5 years.

FACTORY PRICES direct to you are less than others ask for cheap wheels. Other reliable models from \$12 up. A few good second-hand machines \$3 to \$8.

10 DAYS' FREE TRIAL on approval, freight prepaid, anywhere in U.S. without a cent in advance. DO NOT BUY a bicycle or a pair of tires from anyone at any price until you get our big new catalog and special prices and a marvelous new offer. A postal brings everything. Write it now.

Coaster-Brake Rear Wheels, lamps, parts and sundries at half price. Rider Agents everywhere are coming money selling our bicycles, tires and sundries. Write today.

MEAD CYCLE CO. DEPT. W 77 CHICAGO

Agents—New Self-Heating Iron
Burns KEROSENE (Coal Oil) Absolutely Safe

Odorless—Cheapest Fuel Known. Women everywhere want a Kerosene Iron. Low Price Means Quick Sales. Write quick for terms. Big profits. Your territory is open. FREE SAMPLE to Workers.

THOMAS IRON CO., 245 Lane St., Dayton, O.

The BEST Light

The problems of adequate illumination vanish when you install a "Best" Light system. More than 200 styles are pictured in our catalog—every one of them guaranteed to give a clear, radiant white light at lower cost than any other illumination you can use. Agents wanted. Write quick.

THE BEST LIGHT CO.
280 East 5th St., Canton, O.

Silver Herring 3c.
SELECTED QUALITY.

Don't miss this bargain while the catch is good. Packed in strong, tight wooden packages. Our Silver Herring are known to be the finest flavored of any. Get our price list for other varieties.

WISCONSIN FISHING CO.
Department Y, Green Bay, Wis.

10-DAYS FREE

Best Vacuum Cleaner on the market. Double Suction, double power. Guaranteed 5-years. Sent to you Express Prepaid.

10 DAYS FREE TRIAL.
Best bargain ever offered in a first-class Vacuum Cleaner. Don't send us one cent. Write for Free Trial Offer. Agents wanted.

WARNER VACUUM CLEANER CO.
DEPT. 55 MUNCIE, IND.

When writing to advertisers please mention The Michigan Farmer.

Woman and Her Needs At Home and Elsewhere

The Incentive of Necessity.

IT'S a fine thing to have to work. I know I've remarked that before to my tolerant readers. But every day I am so impressed with the greatness of it, that I just can't help writing it over and over again. You notice, too, that this time I said "have" to work. Not just simply "to work." And I say it because most of the people I see making good are the ones who have had to jump right to it in order to provide for themselves and one or two dependents.

Two young doctors hung out their shingles in our block three years ago. Both had just graduated, one on borrowed money, the other with all bills paid by father. The one had, not only to repay the loan, but to help with the support of his mother. On top of that he decided he could no longer live without the only girl in the world, so he married. The other doctor married, too, but instead of being obliged to help out at home he depended upon the old folks to help him out until he had established a practice.

The first doctor felt that it was up to him to hustle, and he did. He kept up his studies, turned down social engagements so that he might be always on hand, haunted the hospitals for the latest discoveries and methods, and left no stone unturned to get to the top. The second doctor felt that there was no particular reason for overwork, so he took things easy. He had studied so hard in college that he felt the need of a rest from books, so he took it, and got rusty. He accepted every social invitation he received, for a fellow must have some relaxation, and a doctor ought to know people. But while he was at some dinner or evening party the people who would call an inexperienced doctor, rang the other fellow's bell, and the friends the social light cultivated continued to patronize their own experienced family physician.

They are only three years out of school, but the one doctor has his debts all paid and is starting in to buy a home. He is busy all the time, and is coming to be noticed occasionally by the big ones. The other man is still looking for money from home, and his office chairs are as new and shiny today as when they came from the store. One doctor had to work, and it was a fine thing for him. The other one felt sure of his present and future so far as money was concerned and it meant disaster.

A young newspaper woman, who is today reckoned among the highest paid

er was concerned. He must be free to develop.

Meantime the sister was going ahead, paying the bills, and unconsciously developing. She was learning life, while she did those things the men wouldn't do, and after a bit she began writing little sketches of life as she saw it down at the bottom. They made a hit, and the editors were astute enough to see it. The girl was relieved from the sordid assignments, and given a chance to show what she could do as a real writer. And she made good. Her salary went up and up, until it passed that of the men who had

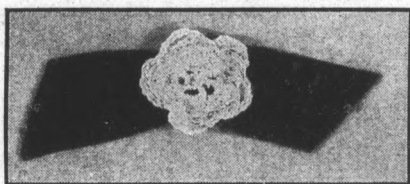
refused to do the assignments which gave her the start. She is at the top today because she had to work, and didn't dare refuse to do anything she was ordered to. Meantime a score of girls who have started in since her day are still at the bottom and envying her. But they are at the bottom because they have never felt the incentive of necessity, and so have snatched at what looked to them to be the pleasantest and easiest tasks.

I used to think it would be a fine thing to be able to give my children the things I wanted and didn't get. But I have changed my mind. I think now the finest thing is to give them the necessity of having to work for what they get. Nothing else will so certainly bring out the best that is in them. DEBORAH.

Some Bows and Buckles.

By MAE Y. MAHAFFY.

ALL sorts of fanciful little conceits are worn with the waists of today, whether of the plain shirtwaist variety or those prettily embellished with ruffles or frills. One of the daintiest of these accessories is in the form of a bar pin, consisting simply of a two-inch length of narrow velvet ribbon, upon



which are mounted small rosebuds and loops of green ribbon to simulate leaves.

The buds are made easily after this fashion: Cut a circle of soft silk or satin off the desired color. This circle should measure an inch and a half in diameter. Fold this through the center and run a gathering thread around the semi-circular portion through both thicknesses at once. Draw up snugly and coil the thread around the base several times, taking one or two stitches to aid in holding the bud in position. Puff out the top, and the bud is ready to tack into place on the velvet. Four buds are used, and the narrow green ribbon loops are so arranged that no raw ends are visible. A safety pin in the back will serve to attach the bow to the waist.

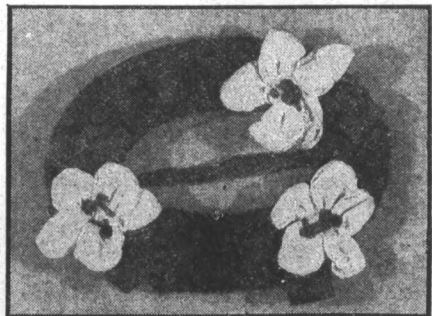
Another wisp of velvet ribbon forms the basis for the crocheted rose. This ribbon is three inches long, and one wide, with ends cut bias. It is drawn up slightly under the rose. To make the

black or colored, as appears in the 3rd illustration. The wheels are made singly, either on forms for sale for the purpose or on pin cushions or cardboard circles. If a cushion is used the inch and a half circle is outlined by 32 pins thrust down into the cushion at equal distances apart. Another pin is placed in the center, and to this the thread is tied, No. 50 spool cotton being a good medium. Carry the thread from the center to one side, around the pin at that point, and back across the circle to the pin exactly opposite. Push the central pin down to the head so it will not interfere with this work, and continue to carry the thread from pin to pin opposite until all have been surrounded by the thread, which must always cross at the center. Now break the thread from the spool, retaining a long length to thread into a needle for the weaving. Knot all the cross threads together at the center, and weave under and over the threads around and around



until a solid center is formed about half an inch in diameter. Now knot every four pair of threads, making eight groups. Weave out on each group for a quarter of an inch, then drop the outer pairs, weaving a bit farther on the central ones. Next knot each group into two parts, carrying the thread around the circle as one works. One thread from each of adjoining pairs is then knotted around in like manner near the pins, which are removed to free the wheel as soon as the thread has been securely fastened. In carrying the thread from point to point it is usually possible to run it in and out of the weaving without marring the design. Two wheels are joined by loose stitches, which is later covered by the ribbon run through opposite openings in the wheels.

The buckle shown may be cut from cardboard, or if one has a discarded metal buckle this will serve as a founda-



rose, crochet a chain (ch), of 6 and join in a circle. Ch 2 to represent a double crochet (dc), ch 2 more, dc 1 into ring, and so on around the circle, making five open spaces, and joining the last ch to that representing the first dc. Make a petal in each space in this way: Single crochet (sc), 1, dc 2, triple crochet (tc), 1, dc 2, sc 1. For the 2nd row of petals make a ch of 4 back of each petal previously made, and place the petals in these loops, making them just as before, except that 2 tc stitches are placed in the center of each petal instead of 1. Chains of 4, placed back of this 2nd row form the foundation for the 3rd row of petals, made like the 2nd, but with the addition of another dc stitch on either side of the tc stitches.

Anyone familiar with the Brazilian or Teneriffe lace work will be able to make up various designs for use with a quarter of a yard of two-inch velvet ribbon,

tion. Wrap the main portion with green satin ribbon, each layer slightly overlapping the former, and fasten off neatly. Twist a bit of the ribbon and carry

across the opening underneath, securing the ends firmly. Three pink roses with loops of green for the foliage form the ornamentation. The roses are made from half-inch ribbon, each petal requiring one inch. Fold in the center and catch the corners down between slightly to produce a rounded effect. Gather the base, and unite five petals to form one rose. Finish the center with French knots in yellow.

Other buckles are surrounded closely with rosebuds like those described for the bar pin, while still others have crocheted roses fastened to a crocheted background. Buckles of this character are not only suitable as a neck finish, but are used on girdles, and to catch up draperies on evening gowns.

HOME QUERIES.

Household Editor:—What is the cause of bad breath?—Sufferer.

Usually indigestion or bad teeth. Strict care in diet and a careful cleaning of the teeth four times a day will greatly help this affliction.

Household Editor:—What is meant by salpicon?—Mary B.

A salpicon is a mixture of different fruits in a flavored syrup, or of diced meats in cream sauce.

Household Editor:—What is meant by au gratin?—Novice.

A dish covered with buttered and browned crumbs.

Mrs. M. E. S., Pop Corn Balls.—Make a syrup of one cup of sugar and a quarter cup of water, boiled until it hardens when dropped in cold water. Pour while hot over the corn, and as soon as it is cool enough to handle, mold into balls with the hands. In place of the sugar and water you can use syrup and vinegar, a tablespoon of the latter to one cup of the former.

Taffy Candy.—Two cups of granulated sugar, one-third cup of water, one tablespoon butter, two tablespoons of vinegar. Boil without stirring, to the hard crack degree, then add one tablespoon of vanilla, pour on greased platters, and, when cool enough to handle pull and cut into pieces. The hands must be well buttered or floured before handling the taffy.

Caramel Icing.—Boil three cups medium brown sugar, one-half cup of cream and one tablespoon of butter four minutes after boiling begins. Then add vanilla to flavor, beat till thick and spread on the cake at once.

To rid a house of mice, first put all food in tins or in glass jars. If the mice can get nothing to eat they will usually go away of themselves. A good trap set where the mice run will expedite matters. It is said that if you sprinkle red pepper around the holes where the mice enter the house, they will leave.

Thank you for the recipes.

Household Editor:—Will you kindly send me a list of books suitable to read to a boy of eight or older? My boy likes to have me read to him, and I would like to know what ought to be read.—Mrs. F. C. W.

Children of this age always like fairy tales and folk stories. The stories of Hans Christian Anderson and Grimms fairy tales are especially good. Besides, these, there are "Black Beauty," "Beautiful Joe," "Alice in Wonderland," "Through the Looking Glass," "Hans Brinker," "Grandfather's Chair," "Water Babies," "Robinson Crusoe," "Swiss Family Robinson," and many others. A series published under the title, "What Every Child Should Know," is now selling for 50 cents the volume. The books include, "Wild Animals Every Child Should Know," birds, heroes, fairy stories, legends, folk tales, poems, etc., each being given one book. "Journeys Through Bookland" is another good series. I can not say whether the magazine you mention is too old for your boy or not, as all depends upon the mental advancement. What would not be too old for one child of eight might be entirely unsuited for another. Write for a sample copy of the magazine and try it.

Household Editor:—How long should mutton chops be broiled?—Mary B.

About eight minutes.

Household Editor:—How many cups of sugar make a pound?—Cook.

Two cups of granulated sugar and two and one-half of powdered.

Household Editor:—Why is it I always feel so tired out in the early morning? When I get up I can scarcely drag around, and it takes me until noon to "get up steam." Then I have to work hard all afternoon and evening to make up for my morning off. Can you suggest any help?—B. B.

Very nervous folks always feel better in the afternoon and evening than in the morning. I should suggest that you doctor your nerves, both physically and

mentally. Make a strenuous effort to dismiss disturbing thoughts. Sleep with your windows open winter and summer, and if possible talk a walk of at least five minutes every day. Drink a cup of hot water the last thing at night and the first thing in the morning. The morning cup should be taken at least an hour before eating. Avoid rich foods and too much sweets, and drink freely of hot water. Hop tea is a good thing for the nerves. With your windows open in winter you will need to wear warmer clothing, a cap, bathrobe and wool stockings, and put hot water bottles or hot irons in the bed.

Mrs. G. B. S. has furnished the address of a firm which sells the knitted tubing for men's mittens. If Mrs. W. D. E. will send a self-addressed, stamped envelope this will be furnished her.

If the party who signed "Unfortunate" to a recent inquiry will send name and address, enclosing stamp, it will receive a personal reply.

SHORT CUTS TO HOUSEKEEPING.

When castor oil must be taken by the little folks, if put into lemon or orange juice and with a taste of juice taken first they will not know they have had any bad medicine.—M. M. K.

If obliged to use hard water, drop a handful of clean oyster or clam shells into your teakettle and range reservoir to attract the deposit of lime.—E. B.

At this time of year when eggs are high and scarce, try putting in one teaspoon of flour and one of yellow corn meal to each pumpkin pie. This serves as a good substitute for eggs.—E. A. C.

A good baby-powder, also one that is excellent for burns, chafing, excessive perspiration, etc., may be cheaply made by mixing equal parts of boracic acid and corn starch. If perfume is desired add a littleorris-root or sachet powder.—Mrs. D. L. M.

If you want cookies to bake a nice brown, turn a dripping pan upside down, cover bottom with the cakes, and place in oven. They will come out baked just right on top and bottom.—E. A. C.

A very simple and useful griddle-greaser can be made by taking an old-fashioned five-pronged silver fork, and winding a cloth in, out and around it and fastening it securely to the handle.—N. D. T.

FASHIONS BY MAY MANTON.

Our large Fashion Book—containing 92 pages illustrating over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of ten cents.



No. 7435—Combination bust confiner and corset cover, 36 to 46 bust.

No. 7910—One-piece corset cover for misses and small women, 14, 16 and 18 years. With or without peplum.

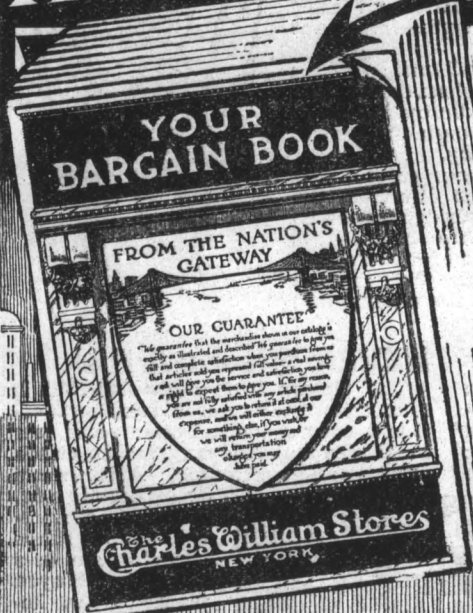
No. 7742—Fancy yoke night gown, small 34 or 36, medium 38 or 40, large 42 or 44 bust. With straight or pointed sleeve edges.

No. 7638—Four-gored petticoat, 22 to 32 waist. With or without plaited frill.

No. 7981—Petticoat with straight lower edge, 22 to 32 waist. Designed for flouncing or bordered material.

The above patterns will be mailed to any address by the Fashion Department of the Michigan Farmer, on receipt of ten cents for each.

A Postal Brings it FREE



Greatest opportunity ever offered to millions of buyers throughout the country who want to economize and get the full worth of every dollar. We want you to compare our prices with those you have been in the habit of paying and see the difference in the values offered on more than 125,000 different items of carefully selected merchandise—all new—all desirable—all offered at a saving of 15c to 50c on every dollar you have to spend.

This Book Contains 1108 Pages of Bargains

Everything Your Family Needs

—in the home—workshop, or on the farm, can be purchased from us at an immense saving. In clothing, apparel, dress goods, underwear, millinery, shoes, furs, coats, boys' clothing and many other lines we show advanced styles at no greater cost than you would pay for inferior qualities on last season's fabrics. Everything we show has been carefully elected and cannot fail to appeal to careful buyers, both as to quality and price. We insist on giving every customer satisfaction. We, therefore, guarantee every purchase to come up to your fullest expectations no matter where you live or what you buy from THE CHARLES WILLIAM STORES.

We Pay Delivery Charges on Thousands of Items

In every possible case we give our customers the benefit of prepaid delivery, insuring rapid service. Write for "YOUR BARGAIN BOOK" C-000 today and have the advantage of buying direct from New York without paying middlemen a big profit on the things you need.

The Charles William Stores

1017 Stores Building, 115 E. 23rd Street, N. Y.

The Handy Antiseptic

Sometimes the housewife cuts her finger with a peeling knife, sometimes her small son bumps himself on the doorstep. For just such emergencies as these,

CARBOLATED Vaseline

Reg. U. S. Pat. Off.

is indispensable. A soothing, antiseptic dressing for cuts, sores, bites and bruises of all kinds.

Sold by drug and department stores everywhere, or sent to you direct on receipt of price—15c. for a full-size bottle.

Write for our new illustrated booklet describing the various forms of "Vaseline" and their various uses.

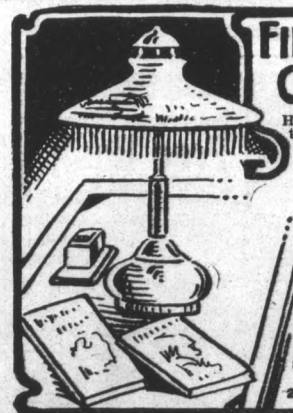


CHESEBROUGH MFG. CO.

(Consolidated)

33 State Street

New York City



FILL IT ONLY ONCE A WEEK
CLEAN IT ONLY ONCE A YEAR

Here's the simplest, cleanest and most easily operated lamp of them all—the Coleman Air-O-Lite. Gives you less trouble, requires less care than any other. No wicks to trim, no chimneys to clean, no greasy oil lamps to fill. No batteries or engines to fuss with. No smoke, no soot, no odor. Nothing to clog up or get out of order.

THE COLEMAN AIR-O-LITE

is a beautifully shaped and finished portable table lamp that makes and burns its own gas. Furnishes bright and cheerful, yet mellow and eye-resting light at only 1-10 the cost of kerosene lighting. Will give you 300 candle power (the equal of 20 oil lamps) at only 1-3c. per hour.

Guaranteed for 5 Years

Absolutely safe, conforms to underwriters' rules, no danger even if tipped over, burns dry without exploding. Write for free literature containing prices, descriptions and showing many beautiful styles of ornamental Air-O-Lite shades. Agents wanted. Experience unnecessary. Good pay offered. Write nearest address of

THE COLEMAN LAMP COMPANY
220 St. Francis, Wichita, Kansas 1011 Summit St., Toledo, Ohio

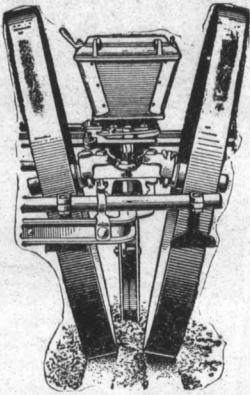
When Writing to advertisers please mention The Michigan Farmer.

Get Your Corn In ON TIME

Thousands upon thousands of corn growers lose heavily every year from *delayed* planting. Just as soon as your fields are in proper planting condition you can *rush* work with the **Hayes**. Permits earlier and faster planting, forces quicker and surer growth—important factors in the success of the corn crop.

Hayes Four-Wheels cover where all ordinary open wheels fail. They open at the top and clean themselves. Guaranteed not to clog or carry the corn over, even in wet and sticky soil. Insures a stand even in low wet spots of field and *allows earlier planting.*

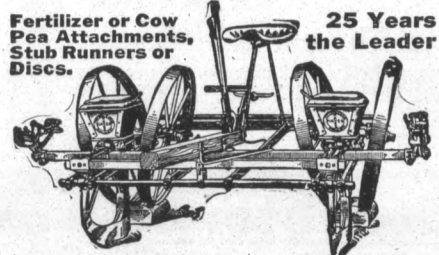
Hayes Four-Wheels guarantee surer germination and quicker growth. Wheels pack the dirt from the sides to hold the moisture and leave a ridge on top so that corn sprouts quickly and comes up several days sooner. The ridge gives greater surface for sun's heat and prevents washouts in hilly fields. This method *assists the budding sprout*, protects its vitality and makes stronger and healthier stalks.



GUARD Against Loss

Uneven depth of planting means a bigger loss than many realize. It's especially bad in cold, backward seasons. Often amounts to several times the cost of a planter in a single year. Avoid a planter that covers part of the corn so deep that no matter how good the seed or how rich the soil *many of the hills never come up*—or leaves other hills uncovered so that the sun and wind *destroy or stunt their growth.*

Hayes Four-Wheels regulate depth of planting to the fraction of an inch—this planter plants every kernel *exactly the same depth.* Here's why: runners set back between the wheels, within 10 inches of the covering point. In going over ridges, dead furrows or uneven ground the shoe *rides and falls* with the wheels. **Hayes** planted corn all comes up at the same time (proof of even depth of planting), and *allows earlier cultivation.*



NEVER Misses A Hill

The **Hayes Drop** never fails. It is the simplest, most durable and most efficient ever made. Fewer parts, less breakages and delays. Has no clutch to miss and give trouble. *Never cracks or grinds the seed.* Will drop accurately any size or shape kernel. *No bare spots in Hayes* planted fields. Increased yields soon pay for it.

No matter how fast you drive, the **Hayes** always plants in perfect check. Cross rows straighter than the way you drive. Easiest handled planter. Also shortest coupled, making it the *lightest draft*, and turns in *shortest space.* For these reasons you can plant from *three to five more acres a day* with the **Hayes** and get your corn in earlier.

170,000 Satisfied Users

In our Free Booklet of Planter Facts, we make it clear to you why the profits of one season—the time and trouble saved—the increased yield—will more than pay for a new **Hayes**. Think these things over and start investigating *now!* Learn the overwhelming advantages in **Hayes Four-Wheel** construction. Take time to find out all the facts before you make your choice. *Ask any Hayes user.*

1,500 dealers. Ask your dealer or let us prove how this planter prevents corn field waste and increases corn yields. Don't make a mistake. Buy the planter that *guarantees results.*

WRITE! Begin investigating today by sending for Free Booklet "AC" full of valuable planter facts. A postal brings it.

HAYES PUMP & PLANTER COMPANY, GALVA, ILL.

Genasco

THE TRINIDAD-LAKE-ASPHALT

Ready Roofing

When you want all the buildings on the farm waterproofed to stay—cover them with this genuine asphalt roofing, applied with the Kant-leak Kleet.

Genasco gives real resistance to snow, rain, sun, wind, heat, cold, and fire; and the Kant-leak Kleet waterproofs seams without cement.

Ask your dealer for Genasco. Mineral or smooth surface. Look for the hemisphere trademark.

The Barber Asphalt Paving Company, Philadelphia

Largest producers in the world of asphalt and ready roofing

New York Chicago San Francisco

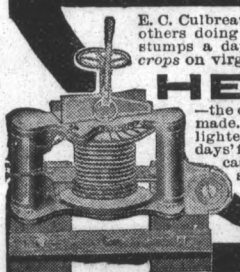


Biggest Stumps Pulled For 4c Each—In 5 Minutes!

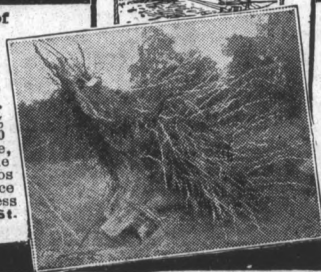
E. C. Culbreath, Johnston, S. C., does it. Thousands of others doing it. Why not you? Pull an acre of stumps a day. Double the land value—grow big crops on virgin soil! Get a

HERCULES

—the only all steel, triple power stump puller made. More power than a locomotive. 60% lighter, 40% stronger than cast iron puller. 30 days' free trial. 3 year guarantee to replace, free, castings that break from any cause. Double safety ratchets. Free book shows photos and letters from owners. Special price will interest you. Write now. Address Hercules Mfg. Co., 137 22nd St. Centerville, Iowa



Free Book



Farm Commerce.

Grading Corn for the Market.

FARMERS have lost money through a lack of system in grading the products they sell. How much they have lost there is no way of estimating. But the general public is intelligent of the fact that much farm produce has been bought as belonging to one grade and sold to third parties as a higher grade. The federal government has come to feel the injustice that is being worked against the growers of products of the soil and is now planning on eliminating much of the abuse by establishing standards for grading grains.

The first grain to be standardized is corn. Some time ago the government announced tentative grades for this grain. Following the announcement hearings were held giving all interested in the cereal a chance to be heard on any matter of injustice that might result if the tentative grades were made permanent. As a result of these hearings a few minor changes have been made. These changes concerned the poorer grades, allowing a small per cent of heat-damaged or mahogany kernels therein. With these slight modifications the grades have become established and will be put into effect throughout the country on the first of July. Here are the grades of corn as defined by the government:

No. 1.—(White, Yellow and Mixed) must contain not over 14 per cent of moisture, two per cent of damaged corn exclusive of corn damaged by heating, or mahogany kernels, one per cent of foreign materials, including dirt, cob, other grain, finely broken corn, etc. (See general rule No. 8 below), and two per cent of cracked corn, not including finely broken corn. (See general rule No. 9 below).

No. 2.—(White, Yellow and Mixed) must not contain over 15.5 per cent of moisture, four per cent of damaged corn exclusive of corn injured by heating or mahogany corn, one per cent of foreign materials, including dirt, cob, other grains, finely broken corn, etc., and three per cent of cracked corn not including finely broken corn.

No. 3.—(White, Yellow and Mixed) must not contain over 17.5 per cent of moisture, six per cent of damaged corn exclusive of corn injured by heating and mahogany corn, two per cent of foreign materials, including dirt, cob, other grains, finely broken corn, etc., and four per cent of cracked corn, not including finely broken corn.

No. 4.—(White, Yellow and Mixed) must not contain over 19.5 per cent of moisture, eight per cent of damaged corn of which one and one-half may be heat damaged or mahogany corn, two per cent of foreign materials including dirt, cob, other grains, finely broken corn, etc., and four per cent of cracked corn, not including finely broken corn.

No. 5.—(White, Yellow and Mixed) must not contain over 21.5 per cent of moisture, 10 per cent of damaged corn of which one per cent may be heat-damaged or mahogany corn, three per cent of foreign materials, including dirt, cob, other grains, finely broken corn, etc., and five per cent of cracked corn, not including finely broken corn.

No. 6.—(White, Yellow and Mixed) must contain not over 23 per cent of moisture, 15 per cent of damaged corn of which three per cent may be of heat-damaged or mahogany kernels, five per cent of foreign materials, including dirt, cob, other grains, finely broken corn, etc., and seven per cent of cracked corn, not including finely broken kernels.

Sample grade includes all corn that does not meet the requirements of any of the above grades by reason of having an excessive percentage of moisture, damaged kernels, foreign materials, cracked corn, or corn that is hot, heat-damaged, fire-burnt, infested with live weevil, or otherwise distinctly low.

General Rules.

- 1.—The corn in grades No. 1 to No. 5 inclusive must be sweet.
- 2.—White corn, all grades, shall be at least 98 per cent white.
- 3.—Yellow corn, all grades, shall be at least 95 per cent yellow.
- 4.—Mixed corn, all grades, shall include corn of various colors not coming within

the limits for color as provided for under white or yellow corn.

5.—In addition to the various limits indicated, No. 6 corn may be musty, sour, and may also include corn of inferior quality, such as immature and badly blistered.

6.—All corn that does not meet the requirements of either of the six numerical grades by reason of an excessive percentage of moisture, damaged kernels, foreign matter or "cracked" corn; or corn that is hot, heat-damaged, fire-burnt, infested with live weevil, or otherwise of distinctly low quality, shall be classed as sample grade.

7.—In No. 6 and sample grade, reasons for so grading shall be stated on the inspector's certificate.

8.—Finely broken corn shall include all broken particles of corn that will pass through a perforated metal sieve with round holes nine-sixty-fourths of an inch in diameter.

9.—"Cracked" corn shall include all coarsely broken pieces of kernels that will pass through a perforated metal sieve with round holes one-quarter of an inch in diameter, except that the finely broken corn as provided for under Rule 8 shall not be considered as "cracked" corn.

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

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

This work will do for the corn market what the Babcock test has done for the dairy business, it will put the commercial end of corn interests on an absolutely scientific basis. With the methods the government has worked out there will be no guesswork about determining to what grade a certain consignment of corn belongs for the classification is made through accurate weights and mathematical calculations. This is more satisfactory than grading which rests entirely upon a person's judgment unsupported by actual weights or measurements. Farmers can have government agents or disinterested parties grade a sample of their corn, or they can learn to do this themselves and therefore know absolutely how it should be classified.

The benefits coming from this accurate knowledge will be far-reaching. It will protect the grower against unscrupulous dealers. They will be required to grade corn according to the government classification, thus removing the temptation and the opportunity to buy for a grade lower than the quality of the corn warrants.

By standardization grades will be uniform all over the country and by virtue of this fact quotations on corn at different points can be intelligently compared. If a farmer or a dealer has offers of No. 2 Mixed Corn from points in Illinois, Iowa and Kansas he can make an intelligent selection after learning the difference in transportation charges from each point to his station, because the value of No. 2 Mixed Corn will be the same in Illinois as it will be in either of the other two states.

The plan will likewise work to the advantage of responsible dealers for they can know exactly what they are doing when ordering or selling corn. This reduction of the grades to a uniform basis will make it possible to do business on a narrower margin, which fact will bring general benefit to the whole community of producers and consumers of the cereal. Other benefits will undoubtedly result from the arrangement.

It is the purpose of the government to standardize other grains. Congress provided for this in acts passed in 1906 and in 1913. In order to make the ruling on the different grades just to all parties and to all conditions it is necessary that careful work be done and for this reason

the different gradings cannot be made arbitrarily, but must await the scientific consideration of the various conditions prevailing in the markets of this country as well as those existing in foreign ports where American grains are shipped. While the public is anxious that the grades for the other grains be established as early as possible, it is advisable that the work proceed carefully, even if the results are somewhat delayed. Judging from the work done with corn the government is taking every precaution to have the grades right.

CAUSES OF SHRINKAGE WHEN MARKETING CATTLE.

Where the farmer knows the "why" for much of the shrinkage in the weight of cattle from the time they leave the farm until they are sold on the market, he may save money by avoiding some of the causes. Every farmer who sells live stock should read every word of the leading article in this department of next week's Michigan Farmer.

Crop and Market Notes.

Michigan.

Shiawassee Co., Jan. 12.—We are having a blizzard today with the weather around the zero mark. Wheat and rye went into the winter in fine shape with a nice covering of snow. The roads have been fine for the farmers to finish drawing their sugar beets. There is a large acreage of sugar beets being contracted for this year. Cutting wood and logs is about all that is being done these days. Some pieces of timber have been sold for \$12 a thousand on the stump. Wheat 92c; oats 38c; hay \$12; beans \$1.65 per bu. Horses are slow but dairy cows are out of sight, prices being \$75@100 for common stock.

Northern Isabella and Southern Clare Co.'s, Jan. 12.—The most intense cold of the season, with snow blowing and drifting badly. Hard work to keep cattle out of the stable long enough to get a drink. Had one week's sleighing so far this winter. Butchers and stock buyers hustling around the county for fat stock and offering good prices. Quite a large amount of beans marketed last week to pay taxes on our property. Taxes are the highest ever and I presume we will hear an echo from the Calumet strike when we pay next year's taxes. Winter wheat went under cover with a good top. Hay \$12 per ton; beans \$1.65; wheat 87c; oats 34c; rye 57c; eggs 26c; butter 23c; cream 31c.

New Jersey.

Monmouth Co.—The weather here is unusually warm for this season of the year. We have had but two very light snowfalls at this writing. But very little stock is being fed for market, that being mostly hogs and veal calves. Pork is selling at 10c per lb. dressed, and veal at 10c on foot. Eggs are more plentiful than they were a month ago, but are still scarce, retailing at 45c per dozen. Winter grain and young grass look well. The principal crops going off the farms at this time are pork, poultry and veal, poultry selling at 17@28c per lb. The wagon roads are in fair condition, but are given little attention. Farmers are hauling manure, getting firewood and making repairs and improvements around the farm, while those who are engaged in fruit growing to any extent are busy trimming and caring for their orchards. Some are giving up farming, either to retire or to engage in some other business, scarcity of help being the general excuse for making the change.

New York.

Niagara Co.—We have had a remarkably mild winter so far, with very little snow. Roads have been fine and autos could run most of the time. Most farmers have their trees partly or all trimmed. They have been busy hauling manure, and with much care and coaxing the hens have begun to lay. Some farmers are cutting wood, some overhauling machinery and tools for summer use. The weather has been so fine that few farmers have spent much time indoors trying to keep the fires hot. Eggs have gone from 40c to 35c; butter 28c; hogs 8c; calves 8c.

Columbia Co.—Now have eight inches of snow, with good sleighing, and temperature below zero. Shortage of hay and corn crops have made feed scarce and surplus stock has been pretty well sold off. There is but little wheat grown in this section. The usual amount of rye was sown and promises well. Considerable state road improvement has been made. Until the cold snap the hens laid well. Not much for sale except straw. Many of the farmers go to the Hudson river to cut ice, where good wages are paid. Ice 10 to 12 inches thick. Potatoes \$1 per bu; butter 40c; eggs 42c.

Pennsylvania.

Eastern Crawford Co.—We have had one of the heaviest falls of snow ever known in these parts, from 24 to 36 inches, and laying where it fell as there was no wind and the snow was moist. Everything at a standstill on account of the deep snow. Roads have been very good for some time past, and while but little snow, sleighing was very good. A good many logs being taken to the chair factories at Union City. Most farmers just doing chores. Hens laying but little, had begun but the snow checked them. Cattle wintering well. Wheat and new seeding looking fine. Not much if any produce marketed at this time of year.

Crawford Co.—Wheat in this section looks good, and new seeding looks fine.

Wheat is selling at 90c per bu; corn 40c on ear; oats 50c; buckwheat 75c; rye \$1; apples \$1 and very scarce. Most people's hens have not begun to lay well yet, and eggs are scarce and high in price. Few cattle are being raised for market, as this is a dairy section. Milk \$1.95 per cwt. Some of the farmers are selling hay and straw. We have had a very heavy snow storm which has made fine sleighing. There are a number of saw mills busy here this winter.

Lancaster Co.—The average number of cattle per farm is about 30 head. Hens have begun laying; eggs now 35c. We have had but one snow storm this year, and wheat fields look bad. Roads are in bad shape. Farmers employ themselves stripping tobacco, shredding corn, attending sales, and stock marketing. Butter 35c; celery 5c bunch; cabbage, turnips, chickens, pork, beef, hay, straw, wheat and corn being marketed.

Ohio.

Carroll Co.—We have about ten inches of snow down here. There is not much work being done by farmers out of doors, with the exception of a few who have some mine props to make or coal to haul. All live stock looks good. Farmers will likely be short of hay and corn if this winter stays cold as it is now. Butter 26c; eggs 34c.

Shelby Co.—January 4 brought a heavy snow storm, but the ground is now bare. We are having very cold weather with a little snow which I think will cover the wheat all right, as the wheat looks fairly good at present and the meadows are looking good. There are quite a number of public sales, and some land changing hands. Live stock is selling well. There is very little marketing done at present. Hens are beginning to lay some. The farmers are busy cutting wood and hauling out manure for spring. Work is advancing, such as ditching and fence building. Few cattle are being fed and none sold yet. Prices: Hogs \$7.75; cattle \$5@7.50; horses \$15@25; cows \$5@8; wheat 90c; oats 37c; cloverseed \$7.50; eggs 30c; butter 32c; chickens 11c.

Hancock Co.—There are many fall pigs on hand and in good condition. Many fat hogs are going to market at 8c. Quite a number of cattle are being fed for the spring market. Hens are laying well, with eggs selling at 30c. The ground has been covered with snow for nearly a week, but is melting rapidly. Wheat, rye and grass look good. The wagon roads are in good condition. Farmers are busy at butchering, cutting wood and attending farmers' institutes. Nearly all farmers are selling cream, some to cream route men, some to local cream stations, and others ship direct to creamery. Price of butter-fat at local station 33 1/4c per lb. Much hay has been sold for \$11 per ton.

Wayne Co.—We have been having quite pleasant weather so far with two light snowfalls, making sleighing very fair. Very little stock is being fed in this section. Hens are not laying very well, judging from the high price of eggs. Wheat is doing fairly well, and new seeding is a very good catch and in good condition. Farmers are not marketing much grain at present. Everything is apparently dull, farmers being employed mostly in doing chores.

Highland Co.—The weather has been very pleasant, with but very little snow. Only a small amount of stock being fed. The hens haven't begun to lay yet. The wheat looks extra good for this time of the year. The farmers are marketing their corn, hay, hogs and cattle. The wagon roads are in good condition.

Harrison Co.—We are having real winter weather now, with 14 inches of snow. The roads are in fine shape with the best of sleighing. We have had no very cold weather yet this winter, and it has been very fine for feeding. Stock of all kinds is doing well. Wheat has a fine covering of snow and we expect to see it come out in fine shape, for we never saw it look better than it has so far. Eggs are very scarce. Buyers are getting the last of the wool in this county at 22c per lb. Farmers are putting in their time reading and visiting, as there cannot be much work done on a farm when we have so much snow. Hogs are selling at 7 1/2c per lb; chickens 12@13c; beef 11@12c by the side. There are no horses being sold as yet.

Indiana.

Laporte Co.—The weather continues cloudy, with prospect of snow. The roads are good and smooth. Stock is doing well, and feed seems plentiful. Dairy cows are in demand at good prices; there is a buyer from Missouri after Holsteins. Butter 40c; butter-fat at creamery 36c.

Tippicanoe Co.—Farmers' institutes have begun; farmers from all over the state will attend the Farmers' Short Course, held Jan. 12-17. A great many steers and hogs are being fed for market. The Purdue serum plant have caught up in their serum orders, the first time in 18 months. Orders are filled promptly now. Hens are not laying very heavily, not many eggs are being marketed, in fact, fresh eggs are hard to get in the city. There is no snow here and today it has been thawing considerably. The roads have been in excellent condition but since thawing began they are not so good. Farmers here go to town rather often, cut wood, work at chores and attend institutes during the winter months. Cattle are selling at \$6 @8; lambs \$6@7.25; old hens 11c; geese 8c; eggs 25c; butter 26c; mixed timothy hay \$15@17.

Illinois.

LaSalle Co.—We are having the mildest winter experienced in years, but people are saying March will be a holocaust of cold weather. Sunshine has been a scarce commodity. Cucumber growers in this vicinity say the winter's crop will not be up to the usual standard or quantity. Small amount of snow fell two days ago. Winter crops are appearing.

(Continued on page 98).

A Million Dollars Can't Hire Us to Cheapen the Quality of "Ball-Band" Rubber Footwear

We could use cheaper rubber, hasty methods, less care in making "Ball-Band" Footwear for just a few months and pocket a cool million dollars profit. Why don't we do it?

For the same reason that money can't hire you to cheat your friends—we won't cheat the men who believe "Ball-Band" Footwear is the best their money can buy.

"BALL BAND" BAND

It's solid satisfaction as well as good business for us to know that eight million men are wearing "Ball-Band" Goods and talking them up as the strongest, easiest-fitting, longest-wearing rubber footwear under the sun.

Go to your dealer and talk rubber footwear with him. If he is one of the 45,000 "Ball-Band" dealers he will tell you how every kind of rubber footwear that bears the Red Ball trade mark is sure to give honest service. If he does not sell "Ball-Band," the best he can say for any rubber footwear he sells is, "It's most as good as 'Ball-Band.'" "Ball-Band" Boots are made with either rubber or leather soles and in four lengths—Knee, Storm King, Sporting and Hip.

They will give you more days' wear for the dollars they cost than you expect of ordinary boots. That, you know, is the proper way to figure the cheapness of rubber footwear—on how much it costs per day's wear.

Look up the store which shows the Red Ball sign in the window and ask for the rubber footwear which bears the Red Ball trade mark. It is your guarantee of quality. If the Red Ball is not on the goods, you are not getting "Ball-Band" quality. If your dealer cannot supply you, write us and we will see that you are supplied.

Mishawaka Woolen Mfg. Co.

319 Water St., Mishawaka, Ind.

"The House that Pays Millions for Quality"



Write for Free Illustrated Booklet

Your Silo Book is Here

Send us your name for your copy. Learn about the silo door that opens and closes on hinges. Convenient and safe. Silo door closes airtight, protecting silage all year around.

Hinge Door Silo

Has safe ladder—strong anchor base—Billet steel hoops—dozens of big features. Catalog tells all. Also get offer on Lansing Silo and Silberzahn cutter. Address nearest office, Dept. 15

Woods Bros. Silo & Mfg. Co.

General Offices, Lincoln, Neb.

Lansing, Mich., Maryville, Mo., Minneapolis, Minn., Cedar Rapids, Ia., East St. Louis, Ill., Topeka, Kan., Lexington, Ky., Denver, Colo., Spokane, Wash., West Bend, Wis.

MAIL POSTAL NOW

PULVERIZED LIMESTONE

Is your Soil Acid? Do you have trouble in getting Legumes to grow? Limestone corrects Acidity, improves the Physical condition of soils and aids in liberating Potash. Use our

Finely Pulverized High Calcium Limestone.

Increased Capacity. Low Prices. Write us. Northern Lime Company, Petoskey, Mich.

DON'T WASTE MONEY

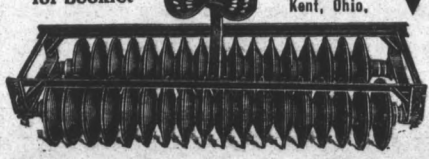
buying a land roller, clod crusher, pulverizer and leveler. You get ALL in ONE machine, and save the work of two extra trips over the plowed ground, when you buy the

IMPERIAL PULVERIZER

and it is the ONLY machine that packs the subsoil and leaves the surface loose. Makes best seed bed. Soil retains moisture and produces bigger crops.

Write today for Booklet

Peterson Mfg. Co., 146 River St., Kent, Ohio.



20 Silo Owners Get this Free

The book tells, for example, in the words of users, how high the Blizard elevates—how much work it does—how big an engine is needed—how long it lasts, etc. Write for this book today—it's free—a post card is enough.

THE JOS. DICK MFG. CO.

151 Tuscarawas St., Canton, Ohio.

The Glazed Tile Steel Reinforced Guernsey Silo

THE FREE GUERNSEY BOOKLET contains valuable information that every prospective silo buyer should have. Tells why Guernseys are proof against moisture, air, sun, wind, fire and time—No painting, no repainting. Agents wanted. Write for booklet, guarantee, etc., FREE.

Guernsey Clay Co., Indianapolis, Ind.

GLAZED TILE SILO From Kiln To Farm

RED CEDAR doors with galv'd frame, galv'd peaked hoops, continuous opening, safe ladder. Money saved in early-in-the-year purchase, and right through including installation. Catalog and facts from Cement and Tile Dept. J

KALAMAZOO TANK & SILO CO., Kalamazoo, Mich.

SCIENTIFIC SWEEP MILL

This No. 6 triple geared, double acting sweep mill has more capacity and will do better work than any other two-horse mill; it

Turns Corn to Dollars

Avoid waste, and make big profits by grinding your feed with one of our mills. We make power mills also for engines of any size. Send for free catalog.

THE BAUER BROS. CO., Box 508 Springfield, Ohio



MILNE STUMP PULLERS for trees or stumps. You can cut them down. New All-Steel machines. Stump-pulling or self-anchored. Unbreakable; rapid; powerful. Double, Triple and Quadruple Attachment, also Rotary Power for sawing, grinding, etc. Write for free catalog. MILNE MFG. CO., 875 Ninth St., Monmouth, N.J.

Markets.

GRAINS AND SEEDS.

January 20, 1914.

Wheat.—An easy tone prevailed in the wheat market the past week. The quotations are a little lower, due partly to reports last Friday and Saturday of unexpectedly large shipments of the grain from Australia to the consuming countries of Europe. The main reason for the slowness of the trade, however, lies in the weather conditions; while the growing crop is uncovered in the southwest the temperature has been such as to do no damage, and in the hard wheat sections the mildness has permitted the continuous marketing of grain by farmers, thus keeping a constant supply coming into the elevators to supply the current demand. It is the opinion of dealers that a cold spell would start the market upward, since it would not only endanger the exposed plants but would tend to cut off the deliveries to primary elevators. Liverpool is lower because of heavy shipments on passage, but Argentine has nothing but bullish reports. A year ago the price for No. 2 red wheat was \$1.14 per bu. Quotations are as follows:

	No. 2 Red.	No. 1 White.	May
Wednesday	98½	98½	1.04½
Thursday	98½	98½	1.04½
Friday	98½	98	1.04½
Saturday	98	97½	1.04
Monday	98	97½	1.03½
Tuesday	97¾	97½	1.02½

Chicago, (Jan. 20).—No. 2 red wheat 96½c; May 91½c; July 87½c per bu.

Corn.—While corn values have withstood the weakness in wheat and made a fractional advance, the trade is not to be considered active and this comes largely from the prevailing weather which is reducing the amount of corn required for stock, especially for maintenance rations. A cold snap will probably help the trade. Some apprehension is held by dealers of the influence of duty-free corn from South America where the crop is reported good. One year ago the price for No. 3 corn was 50c per bu. Quotations for the past week are:

	No. 2 Mixed.	No. 2 Yellow.
Wednesday	63	65
Thursday	63½	65½
Friday	63½	65½
Saturday	63½	65½
Monday	63½	65½
Tuesday	63½	65½

Chicago, (Jan. 20).—No. 3 corn 59¢ per bu; May 65½c; July 64½c per bu.

Oats.—This cereal is following corn rather than wheat with prices a full cent above those of last week. Visible supply is a million bushels below the holdings of last week. The invasion of oats from Canada has been ignored by dealers. One year ago the price for standard oats was 35c per bu. Quotations for the past week are:

	No. 2 Standard.	No. 3 White.
Wednesday	41½	41
Thursday	42	41½
Friday	42	41½
Saturday	42	41½
Monday	42	41½
Tuesday	42	41½

Chicago, (Jan. 20).—Standard 39½c per bu; May 39½c; July 39c.

Beans.—Although conditions seem to favor a general advance in bean values the market is slow by reason of a light demand. Prices are steady. The local board of trade quotes immediate and December shipments at \$1.85; Jan., \$1.87; Feb., 1.92 per bushel. Chicago reports a small trade. Pea beans, hand-picked, choice, are higher at \$2.10; common \$1.75 @2; red kidneys, choice, steady at \$2.90 per bushel.

Rye.—This cereal rules steady. No. 2 is quoted at 66c per bu.

Barley.—At Chicago barley is quoted at 50¢ per bu., while Milwaukee quotes the malting grades at from \$38 to \$76c.

Cloverseed.—Although a good demand prevails prices are off 10c for common seed but steady for alsike. Prime spot is quoted at Detroit at \$8.90 per bu; March \$8.95. Prime alsike steady at \$11.75. At Toledo prime cash is quoted at \$9 and prime alsike at \$10.80.

Timothy.—Prime spot is steady, being quoted at \$2.55 per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.30; second, \$4.80; straight, \$4.50; spring patent, \$5.10; rye flour, \$4.40 per bbl.

Feed.—In 100-lb. sacks, jobbing lots: Bran, \$25; coarse middlings, \$27; fine middlings, \$29; cracked corn, \$29; coarse corn meal, \$28; corn and oat chop, \$25.60 per ton.

Hay.—All grades are steady. Prices: Carlots on the track at Detroit are: No. 1 timothy, \$15@16; standard \$14@15; No. 2, \$12@14; light mixed, \$14@14.50; No. 1 mixed, \$12@13.50; No. 1 clover \$12@13.

New York.—Offerings are moderate and demand light. No. 1 timothy \$21@22; No. 3 to standard \$16@20.50; light clover mixed \$18.50@20; clover \$17@18 per ton for large bales.

Chicago.—All grades higher. Choice timothy is quoted at \$18.50@19 per ton; No. 1, \$16.50@17.50; No. 2, \$13.50@14.50.

Straw.—All grades rule steady. Rye \$7.50@8; oat straw \$7@7.50; wheat straw \$6.50@7 per ton.

Chicago.—Quotable as follows: Rye \$7@7.50; oat \$7@7.50; wheat \$6.50@7.

New York.—Rye straw \$16@17 per ton; oat straw \$10@11.

DAIRY AND POULTRY PRODUCTS.

Butter.—The market remains firm with prices unchanged. Quotations: Extra creamery 33c per lb; firsts 29c; dairy 21c; packing stock 18c.

Chicago.—Conditions are practically the same as those of last week. Trade is slow with the higher grades in greatest demand. Quotations are: Extra creamery 32½c; extra firsts 28@29c; firsts 26@28c; seconds 22@25c; ladies 20@21c; packing stock 12@20c per lb, according to quality.

Elgin.—Market firm at 32@32½c per lb, which is ½c lower than last week.

New York.—Market firm with prices ½c higher than last week. Quotations: Creamery extras 33½@34c; firsts 28½@32½c; seconds, 24½@28c; packing stock, 19½c per lb.

Eggs.—Market steady with no change in prices. Current receipts of fresh stock is quotable at 31c per dozen.

Chicago.—Market is easy at current prices. Trade rather slow and buyers rather cautious at present prices. Quotations: Miscellaneous lots, cases included 28@31½c, according to quality; ordinary firsts 29@30c; firsts 31½@32c; refrigerator stock is steady at 27½@28c for April firsts.

New York.—Market continues dull with prices unchanged. Quotations: Fresh gathered extras 36@37c; extra firsts 34½@35c; firsts 33@34c per dozen.

Poultry.—Local market holds firm with prices about 1c higher on springs and hens. Other stock remains unchanged. Receipts are easily disposed of. Quotations: Live.—Springs 14½@15c; hens 14@14½c; turkeys 19@20c; geese 14½@15c; ducks 16@17c.

Chicago.—Market shows slight improvement over last week. Fowls ½c higher and spring chickens 1c. Other stock remains the same. Quotations on live are: Turkeys, good weights 16c; other 12c; fowls, choice 14c; spring chickens 13½c; geese 10@12c, according to quality; ducks 14@15c.

Cheese.—The market continues firm with prices unchanged. Michigan flats are quoted at 15½@16c; New York flats 17½@18c; brick cream 16@16½c; limburger 14@15c.

FRUITS AND VEGETABLES.

Apples.—Market firm with prices unchanged. Quotations: No. 1, \$4.50@5; No. 2, \$2.50@3.50 per bbl. At Chicago apples are meeting fair sale at former prices. Plenty of good stock in storage to draw from. Values for country picked range from \$3.50@5.50 per bbl. No. 1 Jonathan's are selling for \$4.50@5.50; Spies are \$4@4.50; Baldwins are \$4.25@4.50.

Potatoes.—The local market is steady with prices about 5c lower than last week. Quotations: In bulk 60@65c per bu; in sacks 65@70c per bu. for carlots. At Chicago prices are 2c lower, weather being unfavorable for the best trade. Plenty of potatoes to meet requirements of trade. In New York the market is dull with Maine potatoes selling at \$2.35 @2.50 per bag, and state at \$2.25@2.50 per bag. In Pittsburg potatoes are selling at 73@75c per bu. in bulk. Michigan stock is held at 63@68c.

Cabbage.—Steady with prices unchanged. Good quality is quoted at \$2.50@2.75 per bbl. The market is easy at Chicago. Demand for old stock is fair, with prices a little higher for Holland. New southern stock is slow. Prices are unchanged. Quotations: Holland \$1.90@2 per bbl; \$2@2.50 for red; new \$2.25 per bbl.

Onions.—On the local market prices are steady. Quoted at \$1.15 per bu. for yellow and \$1.40 per crate for Spanish. At Chicago trade in domestic stock is good with prices about 15c higher. Sacks 65@70 lbs., Michigan grown sell at \$1.35@1.50.

GRAND RAPIDS.

The egg market started in this week at 28@30c but the price for fresh receipts is expected to weaken owing to the mild weather. Dairy butter is still quoted at 25@26c. Farmers are getting 65@70c for potatoes, with no great change in the market. Apples are in good demand at \$1.25@1.75 per bu. In poultry, live weight, chickens are worth 12@12½c; ducks 14@15c; geese 12@13c; turkeys 16@18c. Dressed hogs are worth 10@10½c. Hay is selling at \$16@18. Local mills are quoting grain prices as follows: Wheat 94c; corn 65c; oats 39c; rye 55c; beans \$1.60@1.70.

PRICES ON DETROIT EASTERN MARKET.

A fairly large amount of trading was done on the eastern market Tuesday morning. Considering the season, the number of farmers and buyers were fairly large. Prices were steady to strong. A fair amount of apples were offered at prices ranging from \$1.25 to \$1.75 per bu. Potatoes were steady at 80c per bu. Cabbage 75@90c, according to quality; parsnips 65@75c; carrots 65c; celery 15@30c per bunch, according to quality; onions scarce at \$1.50 per bu; pork \$11.25 per cwt; eggs 45c per dozen. Loose hay is coming in a little more freely and is moving fairly satisfactory with the top price at \$18 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

January 19, 1914.

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

Receipts of stock here today as follows: Cattle 150 cars; hogs 100 double decks; sheep and lambs 125 double decks; calves 600 head.

There were 150 cars of cattle on the market here today and with 26,000 in Chicago, and reported slow, our market was all of 15@25c per cwt. lower on all

the better grades of cattle weighing from 1150 up. At the close of the market there were about ten loads unsold and the market closed dull on all heavy cattle. The better grades of butcher stuff, weighing from 850 to 1100 lbs. sold only about 10c below last week.

With 100 cars of hogs here today, the market opened active and generally 5@10c higher than last week's close. Packers got the great bulk of their kinds at \$8.65, top for yorkers, was \$8.70, with the balance of these weights selling at \$8.65 and the majority of the pigs were landed at \$8.65. Roughs generally \$7.75 and stags mostly \$6.50. Look for little improvement balance of week.

The market was active today on handy lambs and sheep, but dull on heavy lambs. Prices quarter lower than the close of last week. Choice handy lambs selling mostly from \$8@8.10. Heavy lambs selling mostly at \$7.25. We look for slow trade on heavy lambs all the season. Most of the orders calling for lambs weighing from 75@80c. Look for shade higher prices on lambs last of the week, unless we have heavy receipts.

We quote: Choice lambs, \$8@8.10; heavy lambs, \$7.25@7.40; cull to fair do, \$6@7.75; yearlings, \$6.50@7; bucks, \$3.50 @4; handy ewes, \$5.50@5.60; heavy ewes, \$5.25@5.50; wethers, \$6@6.25; cull sheep, \$4@4.50; veals, choice to extra, \$11.50@12; fair to good, 10@11; heavy calves \$5.50@8.

Chicago.

January 19, 1914.

Cattle. Hogs. Sheep. Receipts today 26,000 45,000 35,000 Same day last year. 25,895 46,755 23,042 Receipts last week. 56,990 170,454 119,338 Same week last year. 63,827 148,756 103,771

This week opens warm and spring-like, and demand for cattle is very poor. At a late hour not much business was accomplished, and aside from the best cattle, which went at steady values, prices were called largely a dime lower. Butcher stock and the medium class steers were more plentiful than usual. Hogs were in lively demand and 5@10c higher, with sales at \$8.20@8.55. The percentage of heavier hogs is increasing, receipts last week averaging in weight 217 lbs., comparing with 214 lbs. a week earlier, 209 lbs. a fortnight earlier, and 223 lbs. a year ago. The sheep and lamb market was extremely slow, prices being largely 25c lower all around. Choice lambs brought \$7.75, with a city butcher paying \$7.90 for a prime lot.

Cattle weakened in values last week on Thursday and sold partly 10c lower, following an advance of 10c earlier in the week in the best class, the demand on local and shipping account having been extremely good. The appearance of cold weather imparted renewed animation to the demand for beef and made a better outlet for cattle, despite the increased receipts. Prime heavy beefs escaped the late weakness, selling again at \$9.50, the best price for the month and 10c higher than during the previous week. Beef steers sold during the week largely at \$8@9.10, with a very good showing of prime heavy steers at \$9.15@9.50 and the best yearlings going at \$9@9.35. Inferior light-weight steers brought \$6.65@7.75, while a better class sold at \$7.80@8.25, with a medium class at \$8.30@8.65 and good steers at \$8.70@9. Butcher cows and heifers had a good outlet at \$4.80@8.50, a few head of fancy yearling heifers bringing \$8.75@9, while cutters went at \$4.20@4.75, canners at \$3.25@4.15 and bulls at \$5.25@7.85. Trade in stockers and feeders was as large as could be expected with further small advances in prices, quotations being largely 40@50c higher than the lowest time in December. Most of the stockers went at \$5.50@7.85, only high-class little yearlings going anywhere near the highest figures, while most feeders carrying much weight sold for \$6.60@7.90. Fair numbers of stock and feeding cows found buyers at \$4.75@6.85 for inferior to prime offerings. There was a good calf trade at \$4.50@8.50 for the heavier weights, with prime light vealers selling up to \$11.60. Desirable heavy stock calves were wanted at \$7.50@8.25. Milch cows had a very poor demand at \$55@75 per head.

Hogs continued their upward course last week and made new high records, the best grade selling at the highest figures recorded since last October. The liberal receipts were usually well taken, with eastern shippers continuing to compete with local packers for the best lots. Hogs of heavy weight were much sought after and brought a good premium over offerings of lighter weight, as the receipts continued to average very light in weight, notwithstanding the encouragement afforded by the much higher prices paid than in nearly all past years. The consumption of fresh pork products is unprecedentedly large, largely because the prices are lower than for other meats, and there is also a large cash demand for cured hog meats and lard. The statistical showing for provisions is bullish, with combined holdings in leading western packing points the first of January 138,364,000 lbs., comparing with 168,606,000 lbs. a year earlier. Hogs sold at \$8.10 to \$8.50 late in the week, the top being a dime higher than a week earlier, while pigs sold at \$6.25@8.10 and stags at \$8.45 @8.85. Prime light hogs sold a dime below top figures.

Sheep and lambs are apt to be marketed extremely liberally at this time, as feed is dear, and many sheepmen need but little encouragement to send in their holdings, whether quite fat or not. On Monday of last week the receipts were exceptionally large, aggregating 50,696 head, and prices averaged lower on that day, as well as at other times during the week. Still the breaks in prices were usually not very serious, for sellers were favored with a good local and shipping demand for desirable flocks, especially for handy-weight yearlings and lambs that were not too heavy for the popular trade.

The weekly receipts continue to be distributed very unevenly, with far the biggest runs usually witnessed the opening day. Among noteworthy sales were some Montana hay-fed lambs at \$7.50 and some Montana feeder lambs at \$7@7.25, demand for feeders exceeding supplies. At the best time of the week prime lambs sold at \$8.30, a dime lower than a week earlier, but the close was bad, lambs selling at \$6@8.10, Michigans at the top, while feeding lambs were higher at \$6.50@7.30. Yearlings closed at \$6.15@7.10, wethers at \$5.25@6, ewes at \$3.50@5.50 and bucks at \$3@4.

CROP AND MARKET NOTES.

(Continued from page 97).

ently in good condition. Prices for home produce as follows: Butter 29@30c; eggs 35c; lard 10@11c.

Perry Co.—Farmers have sold most of their stock on account of shortage of feed, and are wintering as little as possible. About all the farmers are selling now is poultry and eggs, and some living near timber lands have been selling mine props, railway ties and hop poles, but the roads are so bad now it is almost impossible to haul anything. The ground has been covered with snow only once this winter, and that was soon gone. It is now very warm, did not even freeze last night. Wheat never looked better; grass is surely fine. Hogs 7c; chickens 11c; eggs 30c; potatoes, northern \$1.20; wheat \$1.

Indiana.

Jay Co.—A considerable amount of stock is being fed. Over 48 silos were erected in the northern end of the county and many in other parts. Each silo is feeding some stock, many being imported from the south. Dairying is being pushed forward as a profitable side line to general farming. Storekeepers say, "There are not many eggs coming in." Price is 30c. The first snow of any note fell Saturday night and all day Sunday from the northeast. Some sleighing, which many are enjoying. Wheat was looking fine but had been uncovered and in no shape for hard freeze. Snow came in time. There isn't much marketing. Prices do not suit farmers. All the grain that is moving is for ready cash for present use. Roads are in fine shape except the real old pikes which are some chunky. Since the freeze and snow the farmers are not doing anything but regular farm work necessary for stock. A great deal of tile are being hauled for spring ditching. The season for Farmers' Institute begins the 19th to 21st at the county seat, Portland. It is the short course from Purdue University and will have three carloads of farm products on exhibition. Each township has workers out selling tickets for 50c per family. Schools are authorized to dismiss and scholars not marked absent if they attend the sessions. A large sale of tickets is reported.

Missouri.

Warren Co.—The wheat and rye are looking fine. We had a four-inch snow fall about two weeks ago and it stayed on the ground a good while and greatly helped these crops. The farmers in this locality are hauling wood and props when the roads are fit, and working in the timber when they are bad. There are a great many ties and props sold here, and they are mostly made in the winter. The roads since the snow, have been very bad, but the weather in the last few days has been warm and sunny and they have dried rapidly. They will be good in a few days. Hens and springs 12c; eggs 32c; butter-fat 36c; butter 30c; corn 85c; alfalfa hay \$21; hogs 7½c.

Phelps Co.—Wheat, rye and other seedling is looking fine, not much cold weather and snow protected wheat while ground was frozen. Wheat 87c; corn 79c; hay about \$16. Live stock is unusually scarce in this county. Hogs \$7.50@8; cattle \$7.75@8.25; sheep \$5; chickens 10@12c; turkeys 15c; ducks 12c; geese 12c; eggs 27c; hens are just now commencing to lay. Butter 20@25c. Farmers are marketing corn and wheat chiefly. The condition of roads are only fair, but they are improving the roads as they can. Farmers of this county, or the greater number of them, employ themselves in the winter months at making ties, fence posts, and getting up wood.

Kansas.

Cowley Co.—An unusual amount of rain and snow the past month has kept stock off wheat and rye pastures. There has been no very severe cold, and wheat has made a good growth. Little cattle feeding is being done, and most farmers have sold close on hogs owing to the failure of the 1913 corn and kafir crop. Hens are not laying very well yet. Eggs 27c; milk \$2 per cwt; butter 16c; cream 31c. Roads are muddy, and where there is much heavy hauling the roads are bad. Farmers have been kept busy looking after stock.

Dawson Co.—Exceptionally fine weather prevails. Late rains restored the confidence of farmers. There has been practically no snow. Corn is being shipped in from the north for feed. Eggs are an unprofitable crop at present grain prices. Condition of wagon roads could not be improved upon. Very little building has been done during the past year. In spite of reverses, many motor cars have been bought by farmers during the past year.

North Dakota.

Foster Co.—Our weather has been the finest we have had in a good many winters, with no snow, and the roads are fine. Some of our leading farmers are running the road drags every time we have a thaw. Our corn shows and seed contests are beginning to manifest themselves, so that we are having a Better Farming Association formed this week. Cattle and sheep brought the highest price obtained from anywhere last week. Nearly everything was shipped out for fear of the weather; moisture conditions are fine on account of the frost being four feet deep already.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

January 22, 1914.

Cattle.

Receipts, 1602. Market steady.

We quote: Best steers and heifers, \$8 @8.25; steers and heifers, 1000 to 1200, \$7.50@7.75; do 800 to 1000, \$6.75@7.25; do that are fat, 500 to 700, \$5.50@6.25; choice fat cows, \$5.50@5.75; good do, \$5@5.25; common cows, \$4.50@5; canners, \$3@4.25; choice heavy bulls, \$6.50@6.75; fair to good bolognas, bulls, \$6@6.25; stock bulls, \$5@5.75; choice feeding steers, 800 to 1000, \$6.75@7.25; fair do, \$6@6.50; choice stockers, 500 to 700, \$6@6.50; fair stockers, 500 to 700, \$5.50@6; stock heifers, \$5@5.75; milkers, large, young, medium age, \$7@100; common milkers, \$4@6.50.

Spicer & R. sold Mason B. Co. 3 steers av 847 at \$7.35; to Perrin 10 stockers av 695 at \$6.85; to Kull 4 butchers av 880 at \$6.25, 5 do av 702 at \$6.15; to Sullivan P. Co. 3 steers av 923 at \$7.50, 1 cow wgh 1280 at \$6, 1 do wgh 1080 at \$4.75, 1 bull wgh 1660 at \$6.50; to Kamman B. Co. 26 butchers av 929 at \$6.75; to Hammond, S. & Co. 30 do av 771 at \$6.80, 3 bulls av 970 at \$6.50, 2 cows av 975 at \$4, 11 steers av 1024 at \$7; to Newton B. Co. 10 do av 1183 at \$7.65; to Holmes 17 stockers av 500 at \$5.75; to Fry 5 butchers av 652 at \$6.25, 1 cow wgh 880 at \$5, 2 heifers av 675 at \$4.50; to Newton B. Co. 8 butchers av 731 at \$6.50, 1 heifer wgh 780 at \$6; to Mason B. Co. 10 do av 736 at \$6.75, 3 bulls av 1127 at \$6.25, 6 cows av 840 at \$5.50.

Bishop, B. & H. sold Parker, W. & Co. 7 cows av 1020 at \$5.75, 1 do wgh 840 at \$4, 1 bull wgh 1160 at \$6.50, 5 do av 988 at \$6.25, 13 steers av 623 at \$7.15, 4 cows av 927 at \$4.25, 2 bulls av 1365 at \$6.50, 1 do wgh 1130 at \$5.50, 4 do av 952 at \$4.25, 7 do av 1103 at \$5.75, 4 cows av 790 at \$4.35, 6 do av 1021 at \$5.90, 1 bull wgh 1250 at \$5.90; to Rattowsky 3 cows av 700 at \$5; to Fromm 11 do av 950 at \$5.60; to Mich. B. Co. 26 steers av 880 at \$7.10; to Newton B. Co. 23 do av 920 at \$7.25, 6 do av 890 at \$7.75, 14 do av 875 at \$7, 1 cow wgh 1010 at \$5, 1 do wgh 970 at \$4, 13 butchers av 933 at \$7.25; to Sullivan P. Co. 7 do av 860 at \$7.25, 4 steers av 1015 at \$8, 3 cow and bulls av 850 at \$6.50, 13 butchers av 982 at \$7.15, 7 cows av 980 at \$5.50, 1 steer wgh 1330 at \$7.25, 1 do wgh 1170 at \$8.25, 1 cow wgh 1250 at \$6.50, 1 bull wgh 1640 at \$6.75, 2 cows av 975 at \$5.25; to Bresnahan 4 steers av 692 at \$7.25; to Thompson Bros. 1 cow wgh 940 at \$4.50, 1 do wgh 1000 at \$4; to Marx 18 steers av 926 at \$7.15; to Parker, W. & Co. 30 do av 752 at \$6.75; to Rattowsky 5 cows av 1054 at \$5.50; to Sullivan P. Co. 3 steers av 1023 at \$7.40.

Roe Com. Co. sold Sullivan P. Co. 1 cow wgh 1030 at \$5.50, 1 steer wgh 720 at \$6.50, 2 do av 1020 at \$7.75, 10 do av 1108 at \$7.65; to Goose 6 cows av 1070 at \$5.30; to Smith 12 steers av 1106 at \$7.60; to Rattowsky 2 oxen av 1620 at \$6; to Parker, W. & Co. 3 butchers av 733 at \$6.50, 2 cows av 915 at \$4; to Sullivan P. Co. 9 butchers av 885 at \$6.50, 2 bulls av 1475 at \$6.75; to Hammond, S. & Co. 23 steers av 903 at \$7.35, 2 cows av 1140 at \$5.75; to Newton B. Co. 11 butchers av 845 at \$6.85; to Sullivan P. Co. 5 cows av 1010 at \$5.50, 1 do wgh 730 at \$5.25, 2 do av 900 at \$4.50, 1 do wgh 800 at \$5.50; to Hammond, S. & Co. 6 butchers av 710 at \$6.25, 2 cows av 1020 at \$5.50, 10 do av 1045 at \$5.50, 2 bulls av 1315 at \$6.75; to Rattowsky 2 do av 1260 at \$6.35; to Murray 3 stockers av 713 at \$6.50, 2 do av 685 at \$6.50; to Parker, W. & Co. 13 butchers av 662 at \$6.25, 7 do av 1150 at \$8, 1 cow wgh 990 at \$7.25; to Hammond, S. & Co. 6 cows av 843 at \$4, 3 do av 937 at \$5.25; to Newton B. Co. 11 steers av 986 at \$7.25; to Breitenbeck 16 cows av 970 at \$5, 7 butchers av 790 at \$6.10.

Haley & M. sold Hammond, S. & Co. 12 cows av 1116 at \$5, 2 bulls av 1235 at \$6.50, 2 oxen av 1385 at \$5.75, 2 cows av 1000 at \$5.90, 2 do av 835 at \$5.90, 8 steers av 830 at \$7.25, 1 do wgh 790 at \$6; to Sullivan P. Co. 1 bull wgh 1220 at \$6.50, 1 steer wgh 920 at \$8, 1 do wgh 920 at \$7.25, 2 cows av 1110 at \$5.50; to Kull 7 do av 831 at \$5.85, 1 bull wgh 860 at \$6, 18 butchers av 729 at \$6.80; to Sullivan P. Co. 3 steers av 920 at \$7.40; to Thompson Bros. 2 cows av 1000 at \$5; to Kamman B. Co. 5 do av 1160 at \$5.80, 20 steers av 943 at \$7.15; to Parker, W. & Co. 9 do av 795 at \$6.75; to Rattowsky 2 cows av 1110 at \$5.40, 3 do av 1083 at \$5.40; to Sullivan P. Co. 2 heifers av 725 at \$6.50.

Veal Calves.

Receipts, 489; market steady. Best, \$11@12; others \$8@10.50.

Bishop, B. & H. sold Sullivan P. Co. 13 av 155 at \$11.50, 2 av 145 at \$8.50; to Thompson Bros. 2 av 150 at \$11.50, 1 wgh 120 at \$11.50; to Parker, W. & Co. 18 av 150 at \$11.50, 1 wgh 210 at \$6.50, 1 wgh 100 at \$9.50, 1 wgh 130 at \$11, 3 av 150 at \$10.50, 10 av 138 at \$11.50; to McGuire 1 wgh 140 at \$10.50, 7 av 150 at \$11, 1 wgh 210 at \$8, 5 av 160 at \$11.50, 2 av 110 at \$9.50, 8 av 145 at \$11.50.

Roe Com. Co. sold Nagle P. Co. 1 wgh 140 at \$10, 5 av 165 at \$12, 1 wgh 160 at \$12, 5 av 155 at \$11.

Spicer & R. sold Parker, W. & Co. 2 av 135 at \$11, 5 av 140 at \$11.50, 5 av 125 at \$11, 5 av 120 at \$11.50.

Haley & M. sold Parker, W. & Co. 2

av 190 at \$11.50, 1 wgh 200 at \$11.50, 3 av 140 at \$11, 2 av 110 at \$11.50; to Newton B. Co. 6 av 150 at \$11.50; to Ratner 8 av 135 at \$10.50, 1 wgh 190 at \$9, 5 av 125 at \$11.

Sheep and Lambs.

Receipts, 6508; market strong at Wednesday's prices. Best lambs, \$7.75@7.85; fair to good lambs, \$7.25@7.65; light to common lambs, \$6.75@7.25; yearlings, \$6.75@7; fair to good sheep, \$4.75@5.50; culls and common, \$3.50@4.25.

Spicer & R. sold Bray 141 lambs av 75 at \$7.80, 26 do av 65 at \$7, 25 sheep av 105 at \$5; to Parker, W. & Co. 13 do av 95 at \$4.75, 5 lambs av 70 at \$7.50; to Nagle P. Co. 48 sheep av 95 at \$5, 109 lambs av 85 at \$7.75; to Strauss & A. 191 lambs av 80 at \$7.85; to Costello 67 do av 55 at \$6.50; to Parker, W. & Co. 27 do av 68 at \$7.25, 9 do av 72 at \$7, 4 sheep av 120 at \$5, 25 lambs av 70 at \$7.70, 37 do av 75 at \$7.75, 8 do av 60 at \$6.75.

Bishop, B. & H. sold Hammond, S. & Co. 29 sheep av 85 at \$4.50, 6 do av 70 at \$3.50, 4 do av 100 at \$4.75, 27 do av 105 at \$5, 12 do av 85 at \$4; to Parker, W. & Co. 206 lambs av 88 at \$6.90; to Sullivan P. Co. 35 lambs av 65 at \$7, 46 do av 68 at \$7.25; to Thompson Bros. 12 do av 68 at \$7.35, 51 sheep av 125 at \$4.50; to Breitenbeck 47 lambs av 75 at \$7.35; to Costello 38 do av 73 at \$7.35; to Swift & Co. 842 do av 80 at \$7.75, 14 do av 75 at \$7.65, 16 sheep av 90 at \$5.25, 96 lambs av 90 at \$7.25; to Hayes 10 do av 54 at \$7.25; to Costello 10 do av 51 at \$7; to Sullivan P. Co. 35 sheep av 110 at \$5.25, 42 do av 105 at \$4.50, 14 do av 100 at \$4, 13 lambs av 65 at \$7.25, 14 do av 75 at \$7.40; to Levy & Son 22 sheep av 150 at \$5.50; to Sullivan P. Co. 38 do av 90 at \$4.50, 43 lambs av 65 at \$7.25; to Barlage 18 do av 68 at \$7.25, 36 do av 75 at \$7.80; to Nagle P. Co. 46 sheep av 125 at \$5.

Hogs.

Receipts, 5619; nothing sold up to noon; looks like pigs \$8.20; others \$8.25@8.30; 5c lower.

Bishop, B. & H. sold Parker, W. & Co. 510 av 250 at \$8.40, 1500 ov 215 at \$8.35, 1500 av 180 at \$8.30, 400 av 160 at \$8.25.

Roe Com. Co. sold Sullivan P. Co. 150 av 225 at \$8.40, 160 av 190 at \$8.35, 60 av 160 at \$8.25.

Haley & M. sold Hammond, S. & Co. 400 av 200 at \$8.30.

Spicer & R. sold same 600 av 200 at \$8.30.

Canada, as well as the United States, is not maintaining its former high standard as a mutton and wool producing country, and instead of the influx of Canadian mutton feared by many people on this side of the international boundary line, the far western Canadian provinces are drawing on our flocks. During two months a single packing concern is reported as having frozen and shipped from St. Paul and Chicago to Winnipeg about 30,000 fat sheep carcasses, and there are no indications of any abatement in this large outlet. It is stated that western Canada is receiving 75 per cent of its mutton requirements from Montana.

Save \$35 to \$50

Yes sir, I'll save you \$35 to \$50 in the first cost alone on the best, most modern, most sanitary and closest skimming cream separator ever built. When you buy the **New Galloway Sanitary**—you pay just one small profit above actual cost of materials and labor. Why pay any dealer \$85 to \$110 for an inferior machine. Buy direct and save one-half. Get my **Special 1914 Offer and 90 Days FREE TRIAL** test of this machine right on your farm. The new Galloway Sanitary skims to a trace, gears run in oil—easy to run—easy to clean. Sold direct, backed by \$25,000 bond. Write for new catalog and special 1914 offer that will help you get your machine partly or entirely without cost in the end. Write to **WM. GALLOWAY COMPANY** 183 Galloway Station, Waterloo, Ia. 463

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

\$1,000 to \$3,000 a year 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.

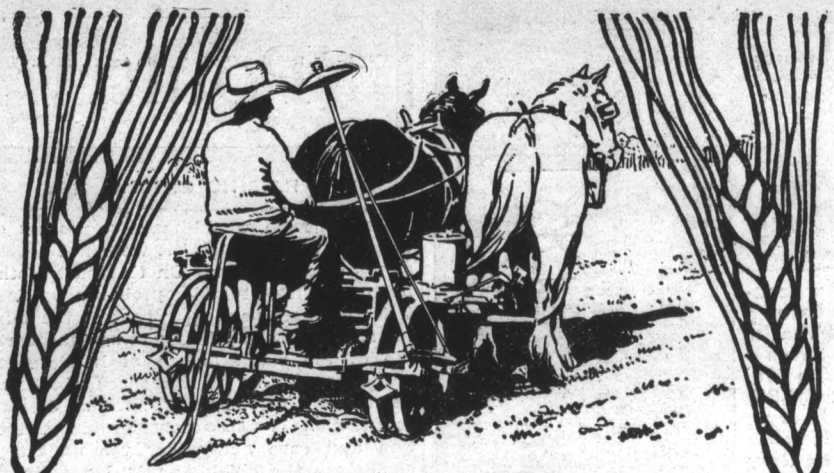
THE DUOFORM CO., Dept. 2, NORTH JAVIA, N. Y.



ELECTRIC Steel Wheel Handy Wagons Are Big Money SAVERS! No more high lifting or pitching. Saves you work and lightens draft nearly 50%. Don't rut fields or roads. We also furnish Electric Steel Wheels to fit ANY wagon. Wheels can't dry out or rot. Send for free book of facts and proofs. **Electric Wheel Co., 25 Elm Street, Quincy, Ill.**

TREES—A big lot of the best **APPLE** and **PEACH** ever grown, at special prices. All kinds Trees, Plantal Vines, Roses, Shrubs, etc. Catalogue all about them **FREE**. **BARNES NURSERY, College Hill, Cincinnati, Ohio. RELIABLE SALESMEN WANTED.**

FOR SALE 6 extra fine Toulouse Ganders, from large, prolific stock at \$3.50 each. **GEORGE KOHL, Royal Oak, Mich.**



Profitable Crops On A-A-C Fertilizers

put more money in your pocket and make more business for us. That is why our factories never shut down. We supply a large portion of the seven million tons of fertilizers used in this country every year from our numerous factories, located from Maine to California.

We make special compositions to fill the requirements of the different crops grown on all kinds of soils. We furnish a fertilizer with 34% available phosphoric acid; special grain fertilizer 2-12-3 and 20-4 analysis; also half potash fertilizer for growing onions, celery, corn and other crops on muck land.

If all farmers knew

A-A-C FERTILIZERS

as they ought to know them, not enough could be manufactured to supply the demand.

Write us and we will tell you more about fertilizers and how to use them, and will send you a large handsome calendar, also booklet on fertilizers, postage paid.

[We want agents for unoccupied territory to handle our fertilizers under Consignment Contract. Don't delay. Write at once.]

The American Agricultural Chemical Co.

Detroit Sales Department, Detroit, Mich.

Also Cleveland and Cincinnati.

Address nearest office.



BE THE OATS KING

Make big money selling improved Seed Oats. Help me supply this tremendous demand. My special new Oats Book 10c. All about newest 100 to 141 bu. varieties. What soils adapted, etc. With it I will send free sample and new, big free

Pure Seed Book for 1914

It is filled with information on growing big profitable Oats, Wheat, Corn, Alfalfa, Clover and other legume crops. Packed with pictures, full of planting hints, tells about "Nitragin," the wonderful seed inoculator. You Want It. Write today. Address

GALLOWAY Bros.-Bowman Co. 182 Galloway Sta. Waterloo, Iowa.

DRESSED HOGS

These are our specialties just now. Our 25 years' experience has taught us how to sell them for you to best advantage. Our reputation for honest dealing and quick returns is assured by our record.

DRESSED VEAL

POULTRY reputation for honest dealing and quick returns is assured by our record.

RABBITS

WRITE TODAY.

Chas. W. Rudd & Son, Detroit, Mich.

We Want HAY & STRAW

We get the top price on consignments, make liberal advancements and prompt remittances.

Daniel McCaffrey's Sons Co. PITTSBURG, PA.

Reference, Washington Trust Company, or any bank in city.

Griggs, Fuller & Co., Wholesale Commission House, potatoes, poultry and rabbits. Quick returns.

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

FOR SALE or EXCHANGE

Hotel, livery, potato cellar, coal & wood business in connection. \$4000 cash or will exchange for farm worth up to \$6000, and pay difference. Address Box 7, Clarion, Mich.

Farms and Farm Lands For Sale

150 FARMS FOR SALE—Near Phila. and Trenton markets, good R.R. and trolley facilities. New catalog. Est. 20 years. **Horace G. Reeder, Newtown, Pa.**

WHY RENT when we sell the best land in the north-west on crop payment plan? **RED RIVER VALLEY LAND CO., Fargo, N. D.**

186 a. of heirship property. Level land, good soil and water. 17 a. of timber, large house and good roomy buildings for all kinds of stock. An ideal dairy or stock farm. 2 1/2 miles from town of R.R.'s. To make quick sale it is offered at the low price of \$65.00 per acre. Address, F. H. Carpenter, R.D. No. 2, Otsego, Mich.

FARMS, GOOD, CHEAP, PROFITABLE.

UNUSUAL OPPORTUNITIES NOW.

State Board of Agriculture, Dover, Delaware.

A BARGAIN—80 a. of Heirship Property, good soil and water. Large house, 2 barns, chicken coop and wagon house. Good for stock, 4 miles from town. Good roads, R.F.D. and telephone. \$90 a. **MRS. P. F. KNAPP, Sunfield, Michigan.**

MICHIGAN FARMING LANDS

Near Saginaw and Bay City, in Gladwin and Midland Counties. Low prices. Easy terms. Clear title. Write for maps and particulars. **STAFFED BROTHERS, 15 Merrill Building, Saginaw, (W. E.), Michigan.**

Virginia Farms and Homes.

FREE CATALOGUE OF SPLENDID BARGAINS.

R. B. CHAFFIN & CO., Inc., Richmond, Va.

Headquarters For N. Y. Farms

But not for abandoned rocks and timber tracts. Producing agricultural land being sold to close estate, account old age, etc., is usually handled by those old established offices. Read big free illustrated bulletin and then ask about more recent listings. **FARM BROKERS ASS'N., Sec. No. 8, Oneida, N. Y.**

MONEY-MAKING FARMS—21 States; \$15 to

stock and tools often included to settle quickly. More for your money in productive land near good markets here today than elsewhere on earth. Get the facts. **Big Illustrated Bargain Sheet free. E. A. STROUT FARM AGENCY, Station 101, New York City.**

FOR SALE

Two excellent 100-acre farms in Middlesex County, Canada, four miles from Glencoe, on good gravel road; soil rich clay loam. These farms are well fenced, good buildings and water. Will be sold reasonable; possession last of March. Also one of the best fifty acres, two miles from Glencoe; rich clay loam, large house, barn, stable, shed and drive house, good well with windmill. **ARCHIE McVICAR (Moses), R. R. No. 2, Glencoe.**

Who Wants a Fine Home Farm For Cost of

105 acres; 10 acres timber, balance cultivated. Buildings wire fenced. 15 room house, a dandy. Two barns, basement, 18 cow stalls, concrete floors. Hen house, granary. Buildings all in fine condition. Apples, pears, plums. Last year's crops \$1,975. 1/4 mile to school and creamery. Price \$6,000; part cash, balance time. **Hall's Farm Agency, Owego, Tioga Co., N. Y.**

Burpee, Philadelphia,

is sufficient for the front of a post card. If you will write your own address plainly on the other side we shall be pleased to send THE LEADING AMERICAN SEED CATALOG, a bright new book of 182 pages, which should be read by all who would have the best garden possible and who are willing to pay a fair price for

Seeds of the Burpee-Quality

Incubation Facts



WHILE you stick to the old fashioned idea of the lamp on the side you are going to continue to have cold corners and bad luck. The X-Ray incubator heats from the center. It keeps every inch of space perfectly heated always. It will give you better, bigger hatches. More than this

One Gallon of Oil Does for an Entire Hatch—One Filling of the Lamp

Why not study into this incubator matter a little. Use your brain. Send for our book and compare our construction with the old lamp at the side kind. Has two double glass panels in top—you can see eggs any time. Ventilate or turn eggs by simply lifting lid.

X-Ray Brooders Too

Same scientific heating system—the healthiest, coziest home chicks ever had.

Direct to you and with no agent's or dealer's profit. Let us tell you the facts about really scientific incubation and prove them. Don't fail to get this knowledge. All put into our Big New Free Book No. 29. Drop post card for it today. We pay the freight.

X-Ray Incubator Co., Des Moines, Ia.

Ironclad WINS

Mrs. C.F. Merrick, Lockney, Tex., with her 140 egg Ironclad incubator wins in the Mo. Valley Farmer and Nebr. Farm Journal Big Hatching Contest. She placed 148 eggs in the incubator and hatched 148 strong chicks. Think of that. You can now get these famous winners, Ironclad

140 Egg Incubator } BOTH FOR \$10

Chick Brooder }
If ordered together. 30 days trial, 10-year guarantee. Order direct—money back if not satisfied. Incubator is California Redwood covered with Galvanized iron, triple walls, copper tank, nursery egg tester. Set up ready to run. Brooder with wire yard. Roomy, well made. Order from this ad. Send for free catalogue. Ironclad Incubator Co. Box 117, Racine, Wis. (3)

130 Egg Mankato Incubator \$7.25

A high grade hatcher, direct from factory to user. Has red wood case, triple walls, asbestos lined, copper hot water tank, self regulator, nursery, high legs, safety lamp, etc. Safe, simple and sure. All set up ready for use. Money back guarantee. 18 years experience. Brooders for 120 chicks \$2.50. For 240 chicks \$4.00 and up. Write for big free catalogue.

Mankato Incubator Co., Box 727 Mankato, Minn.

LEE'S LICE KILLER

Germozone, Louse Powder, Egg Maker and other Poultry remedies have a successful reputation of twenty years behind them. They have brought success to thousands of poultry raisers and will to you. Lee's big "New Poultry Book", "Reading Symptoms of Disease" and "Poultry Pointers" free from all Lee's dealers, or write direct. The New Mandy Lee Incubator is a real automatic hatcher. Write for catalogue. GEO. H. LEE CO., 991 HARNEY ST. OMAHA, NEB.

KITSELMAN FENCE

Get It From the Factory Direct. We make you the same price we would make the Dealer or Jobber. That is why we can save you money. Look at these very low prices.

14 CENTS A ROD
23 1/4 c. a rod for 26-in. hog fence
25 1/4 c. a rod for 49-in. farm fence
25 1/4 c. a rod for 60-in. poultry fence
\$1.40 for 80 rod spool of Ideal Barbed Wire. Large free Catalog showing 100 styles of Farm, Poultry and Lawn Fence.

KITSELMAN BROS. Box 278 Muncie, Ind.

BROWN FENCE
13 Cents Per Rod Up
Strongest, heaviest wire, Double galvanized. Outlasts others nearly 2 to 1. Low prices direct from factory. Over 150 styles for every purpose—hog, sheep, poultry, rabbit, horse, cattle. Also lawn fence and gates of all styles. Mail postal for catalog and sample to test and compare with others. Address THE BROWN FENCE & WIRE CO., Cleveland, Ohio, Department 49.

Poultry and Bees.

RAISING CHICKS.

Many people would make a success of the poultry business if it were not necessary to raise chicks. On this part of the business they stumble, probably because it is the most particular part of the business. As with all living things the early life of the chick is one of helplessness and susceptibility to influences which are detrimental to the chick, such as disease conditions. It needs considerable protection and care and under the unnatural conditions the chick is raised, new influences are brought to gear which even the instinct of Mother Hen can not protect her young from. Therefore her instinct has to be supplemented by the knowledge and judgment of the poultry man. When the chicks are raised by a brooder the instinct of the hen is entirely missing and knowledge has to be the entire guide in raising the little ones. This is generally preferable, as often instinct works contrary to knowledge, and delays progress. Instinct is a natural attribute and is useful under natural conditions, but when used in unnatural conditions it becomes less useful and often works to disadvantage.

In raising large amounts of little chicks anything but a brooder is out of the question, as raising with hens would involve many times the work and would not give as good results. Under the hen system the chicks are not protected as well from their enemies; neither can the hen protect them as well from the wet and dampness. There is also great danger of the chicks becoming lousy from the old hen and at that time the chick has all it can do to take care of itself without having parasites living on it.

Essentials in Raising Chicks.

Regardless of whether the chicks are raised via hen or brooder there are many things which must be given consideration to raise them successfully. First, they must have dry quarters. This is very essential as any dampness will be the cause of disease. If Mother Hen is raising the chicks she should be provided with a dry coop and one which will stand the winds. Although the hen will protect the chicks the coop should also be free from drafts for her comfort. Most any kind of a coop which provides these protections and also some from natural enemies, will do if it will give the hen enough room for comfort. But such crops as an empty barrel lying on its side, while all right under ordinary circumstances, may prove a drowning place for the chicks during a hard rainstorm on account of the puddle of water which will form in the bulge of the barrel. Where the coops have an earth floor the hens will likely scoop out a hollow place which also have like effect. By all means have the coops so that they will amply protect their occupants from rain, wind and enemies and still allow for plenty of ventilation so that it will not be necessary for you to hastily dress during the night to take care of the chicks. The hens should also have ample opportunity to dust herself, and if it is convenient to have her running about with the chicks, so much the better for the chicks.

When the chicks are raised by the wooden hen, ventilation, exercise and moisture are the most important things to be given consideration. Care should also be taken to see that the air is not too dry, as that will have a weakening effect on the chick. If the brooder is properly ventilated the matter of proper humidity of the air will be usually taken care of.

Exercise is considered by many successful poultrymen to be as important as food. If the chicks do not get the proper amount there is sure to be trouble. Therefore, everything should be done to make them exercise. They will enjoy it as it is natural for every young bird or animal to be active.

Feed for Chicks.

There is a difference of opinion between poultrymen as to what should be the first food of the chick and when it should be given. Some think that it is best to wait until the chicks are about two days old before they are fed; others say feed them as soon as they can get around and pick their food. Bread crumbs and hard boiled eggs or milk are thought the best by some, and others think the regular commercial chick feed the best. The writer has had the best success with the latter feed and feeding them when they

can get around to get it. It is also the easiest method. We are sure that the finely cracked grains in the commercial feed are clean and sweet and are also prepared to meet the needs of the chick. By the other method there is a possibility of the bread being sour and the boiled egg or the milk receive contamination from various sources. It seems also that the former method is the most natural and in a case like this it seems better to follow nature as closely as possible. The commercial chick foods make chick feeding simple and lessen the danger of contamination through the food. Many who do not use prepared poultry feeds at any other time use them for their chicks. For a home-made chick food oat meal would be easier than bread, and eggs or milk and would be more like the commercial article. Regardless of what else is fed, the chicks' bran should be kept before them at all times. It is a developer of bone, which is essential for the best development of the chicks and it also tends to keep the bowels in order.

The reason why many hesitate about feeding their chicks when they are just able to get around, is because they think that it interferes with the absorption of the yolk. This is not so; if there is any trouble in yolk absorption it is most always due to improper incubation, generally the lack of sufficient moisture during that process.

The chicks need some source of protein and milk is probably the most handy on the farm. Good sweet milk will be appreciated by the chicks. It should, however, be fed to them so that they will not get it on themselves as it will sour and become a source of trouble. An inverted can in a dish, or something of that sort, would be the best way of serving it. The water dish should also be fixed so they will not get themselves wet or get the water dirty. Care should be taken to prevent the water or the milk from slopping over into the litter as wet litter is a likely source of disease.

Brooders.

The kind of brooder to be used is a thing which each one has to decide for himself. However, the regular outdoor brooder is not of much value outdoors until about the first of April. Such brooders can be used indoors until the weather moderates and then set outdoors. For early hatching there is likely to be too much change in temperature for the best development of the chicks and the chicks have to be housed up too much in order to conserve the heat. Indoor brooding where the chicks can get plenty of air and space for exercise will give the best results for early hatched chicks. Some make a practice even with later hatched chicks to keep them indoors until they are about four weeks old and then let them out.

A few years ago the fireless brooders created considerable interest among poultrymen and a great many have used them with success. One man installed them in his brooder house and had better results with them than with the heat. But it generally takes considerable time to get the chicks used to the fireless brooder and in many ways it is more bothersome than the heated kind. In the matter of ventilation they can not be regulated as well as the regular brooder as the conservation of the animal heat is most essential in the fireless brooder and the heat can not be greatly conserved where there is plenty of ventilation. So with proper regulation the regular heated brooder will generally give the best results.

Bowel Trouble.

Bowel trouble is one of the most serious things that the poultryman has to contend with. It is usually caused from some unsanitary condition of some kind. Cleanliness is the most satisfactory preventative for it. Have the food and the brooder clean, beware of dampness, give the chicks plenty of exercise and fresh air but give the ventilation without draft. If a few precautions are used with reference to these simple things, and the chicks given plenty to eat of the right kind of food, chick raising will be a success and a pleasure.

Make plans for next season's honey crop now. Get price lists from bee supply houses and order supply while you have time.

Proved Profits with Cyphers

Cyphers Means Success

Make this your most profitable year. Conditions never were more favorable for high poultry and egg prices. The shortage of beef, pork and mutton causes this great demand for poultry and eggs. Prepare yourself with the right equipment to reap your share of the large poultry profits.

CYPHERS Incubators and Brooders

have proved their successful operation in countless cases. More Cyphers Incubators and Brooders are used in Government Experiment Stations and State Colleges than all other makes combined. Self-regulating, self-ventilating, fire-proof.

Big Poultry Guide Free

Write for our 244 page book of valuable poultry information. Contains descriptions of Cyphers Incubators and Brooders. Also facts about Cyphers Company's Free Bulletin and Personal-Letter Service, which supplies every-day practical help in poultry raising. Send postal now.

Cyphers Incubator Co.

Dept. 35 Buffalo New York

Big Money in Poultry Get the Facts!

are making money the Belle City way. They tell you how in my new Book of "Hatching Facts." Free to you. Illustrates in actual colors my 8-Times World's Champion Belle City. You get an exact duplicate of the prize winning World's Champion machine. Backed by my Money-Back Guaranty. Jim Rohan, Pres. Belle City Incubator Co., Box 14, Racine, Wis.

MONEY MAKING POULTRY
Our specialty. Leading varieties pure bred chickens, turkeys, ducks and geese. Price winners. Best stock and eggs. Lowest prices oldest farm, 29th year. Fine catalog FREE. H. M. JONES CO., Box 138, Des Moines, Ia.

PFIL'S 65 Varieties
LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1914. Write Henry Pfile, Box 676, Freeport, Ill.

POULTRY.

M. B. Turkeys—Large with fine plumage. Toms \$6. Hens \$4. Indian Runner ducks. A few choice Silver and Partridge Wyandotte cockerels. Collar Bros., Coopersville, Mich.

WHITE HOLLAND TURKEYS. Large, big boned, healthy, hardy, vigorous. T. B. & E. H. McDONAGH, Burt, Michigan.

50 Leading Breeds—Pure bred Chickens, Ducks, Geese Turkeys, Fowls, Eggs, Incubators. Best at lowest prices. Fine large catalog 2c. W. A. WEBER, Box 923, Mankato, Minn.

CHICKS—We ship thousands each season. Booking orders now for spring delivery. Prices always right. Free booklet. Freeport Hatchery, Box 12, Freeport, Mich.

BUFF PLYMOUTH ROCKS—Heavy winter layers. Eggs \$2.00 per setting. Write wants. GEO. W. WAGNER, Ann Arbor, Mich.

BARRED ROCK COCKERELS—\$2.00 each, two for \$3.00, pullets \$1.00 each. A. A. WOOD & SON, Salline, Michigan.

BARRED ROCK COCKERELS—\$3 each, two for \$5. Large, farm raised. Winners for 10 years. J. A. Barnum, Union City, Mich.

Barred Rock Cockerels, Hens and Pullets. W. C. COFFMAN, R. No. 6, Benton Harbor, Mich.

PLYMOUTH Rock cockerels 5 lb. to 11 lb., according to age. Price \$2 to \$8. Mammoth Bronze Tom Turkeys 8 lb. to 35 lb., according to age. Price \$3 to \$25. Eggs in season. A. E. ORAMTON, Vassar, Mich.

PRIZE WINNING Barred Rocks, R. I. Reds, High quality. Low prices. 500 Indian Runner and Pekin ducks, \$5 per trio. circular free. EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.

LILLIE FARMSTEAD POULTRY
B. P. Rocks, R. I. Reds, and S. O. W. Leghorn eggs for sale. 15 for \$1.25 for \$1.50; 50 for \$2.50. OOLON C. LILLIE, Coopersville, Mich.

Rose & Single Comb Rhode Island Red Cockerels. \$2 up. Eggs in season. Mrs. F. J. Napier, Novi, Mich.

SILVER, GOLDEN and WHITE WYANDOTTES. White Stock especially good, send for circular. Browning's Wyandotte Farm, R. 30, Portland, Mich.

WHITE WYANDOTTES—A few choice cockerels from my winter laying strain. L. M. OLDS, Ypsilanti, Michigan.

White Wyandottes—(Fishes Strain) Cockerels \$3 up. Orders booked for eggs \$1 per 15, \$6 per hundred. Mrs. G. A. Wigent, Watervliet, Mich.

WHITE LEGHORNS DAY-OLD-CHICKS—Wyckoff Strain. Maple City Poultry Plant, Box C, Charlotte, Mich.

S. L. WYANDOTTES—Bred from great laying strain of blue ribbon birds. \$2 each. Satisfaction guaranteed. F. E. Cowdrey, Ithaca, Mich.

PINE CREST WHITE ORPINGTONS—Fifty early pullets from prize winning stock, excellent layers. Three and five dollars. MRS. WILLIS HOUGH, PINE CREST FARM, Royal Oak, Michigan.

DOGS AND FERRETS.

Fox and Wolf Hounds

of the best English strain in America 40 years experience in breeding these fine hounds for my own sport. Save your pigs sheep and poultry. Send stamp for catalog.

T. B. HUDSPETH, Sibley, Jackson County, Mo.

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

Mention the Michigan Farmer when writing to advertisers.

Veterinary.

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

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

Impaction.—I have an old Jersey cow that was taken sick several weeks ago and we have treated her ever since, but she is thin, weak and has no appetite. She seemed to be first affected with bloat; we gave her salts and soda which relieved her, but she continued in pain for several days. Since then she suffers no pain, has a painless swelling on brisket and I might say she is farrow. O. Bursal Swelling.—We have been subscribers to your paper and have received much benefit from it. I have a colt four months old that has a bunch on inside of hock joint about the size of an egg; it is soft and when she is not standing with weight on leg, can hardly notice it, but when weight is placed on leg, it shows plainly. She became fastened under a partition, struggled violently, and no doubt injured herself. C. C., Lake Odessa, Mich.—Apply equal parts tincture iodine, spirits of camphor to bunch two or three times a week.

Bog Spavin—Thoroughpin.—I have a spring colt that has a bunch on each side of hock joint and one in front; these bunches appear to cause some stiffness in joint, but no lameness. M. S., Rosebush, Mich.—Apply one part red iodide mercury, one part powdered cantharides and ten parts lard to bunches every week or ten days. Remember, bunches of this kind are not easily reduced and it can only be done by persistent treatment.

Sprained Hip—Wart on Leg.—I have a two-year-old colt that lifts and swings his hind leg outward once in a while when walking, but does not do it when trotting, and this same colt had a wart on leg which is in the way of trace of harness. F. W., Lansing, Mich.—Apply equal parts spirits of camphor and alcohol to hip and stifle twice a day; also cut off wart and apply equal parts powdered alum and boric acid twice a day. If the wound is inclined to bleed after the wart is removed, apply Monsell's solution of iron.

Mange—Ringworm.—Several of our cattle are troubled with a skin disease affecting them first around the eyes, then later neck and shoulders. There are also several round patches or sores and I am inclined to believe the ailment contagious. Have examined for lice and found none. A. C., Arcadia, Mich.—Paint the sore parts with tincture of iodine once a day for four days, then apply one part sulphur and two parts lard every day or two. Give each one of your cattle ½ oz. of Fowler's solution at a dose in feed two or three times a day.

Pigs Choke.—We have pigs seven and one-half weeks old that were weaned ten days ago, have been eating out of trough for the past three weeks and fed scalded wheat meal and warm skim-milk. Now, when they come to feed and swallow some, they back up, fall as if shot, but after struggling a very short time they get over it. These spells usually come on when eating, but don't always. A. B., Byron Center, Mich.—I am inclined to believe that your pigs choke and some of them may be troubled with stomach worms. Feed no cold food, and their milk and middlings should be placed in shallow feed trough to prevent them choking. If you believe they have worms, give 10 or 20 drops of turpentine in 1 oz. of olive oil occasionally.

Vaginitis.—Shortly after my cow was bred she had discharge from vagina, was treated by our local Vet., discharge soon diminished, then she was bred again, was soon as bad as ever. Now, I would like to know what to do. The prescriptions you have given us through your paper have usually produced good results and I would like to have you prescribe for this cow. E. B. T., Belleville, Mich.—Dissolve 1 dr. permanganate potash in a gallon of tepid water and inject not less than one quart into vagina daily. Also dissolve ¼ lb. hypo-sulphite soda in a gallon of water and inject her with this lotion once a day. Also give her 1 oz. hypo-sulphite of soda dissolved in a quart of water as a drench three times a day. I would advise you not to breed her again for six or nine weeks.

Stomach Worms.—I have a flock of sheep that I am sure are troubled with stomach worms and I would like to know if there is any cure for this disease or any way to prevent it spreading. I am feeding bean fodder, oat straw and clover hay. W. M., Lapeer, Mich.—Give each sheep a teaspoonful of gasoline in 2 or 3 ozs. of milk, or give ten drops of carbolic acid in 2 ozs. of milk every three days until they have had four doses and in drenching them, avoid holding head too high, for if so a portion of drench may go down windpipe and produce mechanical pneumonia. You should salt your sheep well and medicate only those that show ill health. The worms inhabit old sheep, but do not seem to do them as much harm as lambs and when these parasites pass out of the bowels, doubtless infect meadows, especially during the spring, summer and autumn season; therefore, sheep should be kept off, infected meadows for a season.

Your Name Please?

So Johnson Can Send You the Old Trusty Book

Johnson wants you to get from it the same ideas that helped half a million other people make big profits with chickens.

It will show you how easy it is to get started and how simple the work is with the Old Trusty Hatcher.

There is no mystery about chicken raising once you get acquainted with the Johnsons, and that's easy—just your name and address on a postal will do.

OLD TRUSTY

Makes biggest average hatches in coldest or warmest weather—over 80 per cent guaranteed—in every state, everywhere.

Now used by three or four times as many people as those who use any other. The reason is—the Old Trusty is simple and easy to operate and always sure of success. No highfalutin' instructions needed.

It's the highest grade hatcher made. But Johnson's direct factory price is low because he operates the largest incubator factory in the world. Every buyer saves about \$5 because of this big factory.

Write your name today—get the book so you can give your income a good big boost with chickens.

Johnson pays freight and ships immediately.

JOHNSON,
Incubator Man,
CLAY CENTER, NEBR.



Dr. David Roberts Answers

Are Your Cows Slinking Their Calves?

Some Vital Questions.

What causes it? A germ in the mother's blood causes abortion.

Does it spread from one cow to another? Yes, usually through the herd bull. Is that the only way? No, infected stables cause it.

Can it be stopped? Yes, by hypodermic injection, washing the genital organs and disinfecting the stables.

Will any ONE medicine prevent abortion? No, because the germ must be met at every turn and no one medicine can do it. Dr. David Roberts' Anti-Abortion medicine overcomes the germs in the mother's blood; Antisepto overcomes the germs in the genital organs; Disinfectal overcomes the germs in the stables. In this manner the germ is met at every turn and it is absolutely impossible for abortion to exist in a herd where this simple treatment—applied by yourself—is used.

Is the loss serious? Yes, both in milk and calves. U. S. Government puts loss at \$12.00 to \$25.00 per cow per year. What will it cost to treat my herd? The price of a good calf. Write Dr. Roberts, telling him how many cows, heifers and bulls you have in the herd. He will answer you promptly. Address

DR. DAVID ROBERTS, Pres.
Dr. David Roberts Veterinary Co.
9647 Wisconsin Ave., Waukesha, Wis.

AT PRIVATE SALE

1 pair high class brown mare mules, out of Belgian dams, sound, weight \$2,500 lbs., age 5 years; 1 pair high class Clyde mares, 4 years old, sound, well matched; 3 high grade yearling Holstein heifers; 8 high grade Berkshire brood sows. Prices right—quality considered.

Address STARKWEATHER STOCK FARM,
Northville, Mich.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS

Herd, consisting of Trojan Ericas, Blackbirds, and Prides, only, headed by BLACK QUALITY ITO, a bull of exceptional individuality and merit. A few young bulls for sale.

WOODCOTE STOCK FARM, Ionia, Mich.

GUERNSEYS—Big bargains in bull calves if sold this month.
W. W. BURDICK, Holt, Michigan.

AYRSHIRES—One of the foremost dairy breeds, description. Michigan School of the Deaf, Flint, Mich.

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

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

A VERY CHOICE HOLSTEIN BULL CALF for sale, from a 30 lb bull and a 21 lb. dam that is from a sister of a 3240 lb. cow, and has produced an 1885 three-year-old heifer. Hillcrest Farm, Kalamazoo, Mich.

HOLSTEIN BULLS AT FARMERS PRICES—Sired by one of the best bulls of America. LONG BEACH FARM, Augusta, Kalamazoo Co., Mich.

HOLSTEIN FRIESIAN CATTLE BREEDERS of high record cows. Young bulls at farmers prices. JONES & SUTZ, Oak Grove, Michigan.

MAPLE Lane Register of Merit Herd—Tuberculin tested by the U. S. Bureau of Animal Industry. Bull calves from cows of R. of M. test. No Females less than \$100. Average of R. of M. herd, 526 lbs. of 85% butter in one year. IRVIN FOX, Allegan, Mich.

REGISTERED Holstein bull, 3 months old. His dam made 17.32 lbs. of butter in 1 days. 70.95 lbs. in 30 days. A. R. O., when less than 24 months old. Her sire has 11 A. R. O. daughters, and he is a son of Fietertje Hengerveld's Count De Kol, who has 88 A. R. O. daughters, 4 with records above 30 lbs. Size of the calf is a son of a 33-lb. cow, and she has a 23-lb. full sister. \$95 brings him to your express office, safe arrival guaranteed. Write for pedigree. HOBART W. FAY, Mason, Michigan.

Reg. Holstein Bull 1 year old dam and sire's dam average 2169 lb. butter 7 days. A. R. O. Write for pedigree and price. CHAS. S. RILEY, Metamora, Mich. R. I.

For Sale 2 year old Holstein Friesian Bull. Very fine large and gentle. High milk and butter records in ancestral families. Address, F.E. Yanatta, R.1, Haslett, Mich.

BULL CALVES—Sired by Albina Bonte Butter Boy No. 33221 whose dam as a Jr. 4 Yr. old has 7 day A.R.O. record Milk 604.8 lbs. Butter 27.05 lbs. W. B. READER, Howell, Michigan.

"Top-Notch" Holsteins.

Choice bull calves from 1 to 3 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices.

McPHERSON FARMS CO., Howell, Michigan.

Purebred Registered
HOLSTEIN CATTLE
The Greatest Dairy Breed
Send for FREE Illustrated Booklets

Holstein-Friesian, Asso., Box 164, Brattleboro, Vt.

Bigelow's Holstein Farms

Breedsville, Mich.

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

Send for circular.

3 FINE YEARLING BULLS!

1 Son of Sir Jolie Johanna, out of an 18th 3-year-old daughter of Sir May Hartog Posch.
2 Sons of Johanna DeColanthe 5th and out of A. R. O. dams.
5 Bull Calves, by Johanna Concordia Champion, No. 60575. A copy of the 24th volume of the Holstein Friesian year book with each of these bulls.

Prices right to quick buyers.
L. E. CONNELL, Fayette, Ohio

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

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

The Jerseys

Pay Dividends on \$500 Per Acre Land



On the northwest coast of California there is a rainfall of from 50 to 100 inches per year. There land is worth \$500 per acre, but grade Jersey herds are paying interest and dividends on that land, averaging 400 lbs. butter fat per year.

Moral: Grade up your herd by getting a pure-bred Jersey sire from a producing dam.

Get facts about Jerseys from
THE AMERICAN JERSEY CATTLE CLUB
324 W. 23d St., New York, N. Y.

Lillie Farmstead Jerseys

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

COLON C. LILLIE, Coopersville, Mich.

DAIRY BRED SHORTHORNS—of best bates Strains of Shorthorns. J. B. HUMMEL, Mason, Michigan.

YOUNG SHORTHORN BULLS—Strong in Bates blood \$100 to \$150 each.

WARNER BROS., Almont, Michigan.

Shorthorn bull calves from good milking cows. Also 1 Reg. Percheron yrl'g Stallion, an extra good one. M. A. BRAY, Okemos, Mich.

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

SHEEP.

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2 ½ miles E. Morrice, on G.T. R.R. and M.U.R. J. Q. A. COOK

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS. "A sheep man of the east." Shropshires, Rambouillets, Follies Delaines and Parsons Oxfords. R. I. Grand Lodge, Mich.

INGLESIDE FARM—Offers recorded ewes bred to choice rams for \$15.00 per head. HERBERT E. POWELL, Ionia, Michigan.

HOGS.

DUROCS & VICTORIAS—Prize winners at the large fairs. Choice stock for sale. STORY FARMS, Lowell, Mich. City Phone 55.

BERKSHIRE For Sale—Sow Bred for April farrow. Being and a choice lot of fall pigs either sex. A. A. FATTULLO, Deckerville, Michigan.

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

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

O. I. C.—Boars all sold. A few gilts bred for April and May farrow. C. J. THOMPSON, Rockford, Michigan.

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

Improved Chesters—Boars all sold, but have a few choice young sows bred for Apr. farrow. No fall pigs. W. O. Wilson, Okemos, Mich.

WRITE US Your Wants For Reg. Chester White Swine, Holstein Bulls, Scotch Collie pups. Sept. pigs now ready for shipment. RAY B. FARMAN, Bronson, Michigan.

O. I. C's—Gilts bred for Mar. and Apr. farrow. Aug. pigs. All of right type. I pay express. GEO. P. ANDREWS, Dansville, Ingham Co., Mich.

O. I. C.—Spring boars all sold. Have a fine lot of spring gilts. Sept. pigs, ready to ship, not akin. Lengthy Prince No. 38161, head of herd, (will weigh ½ ton when mature.) A. Newman, R. 1, Marlette, Mich.

O. I. C.—Spring Boars all sold, fall pigs ready to ship, also a few choice red polled heifers. JOHN BERNER & SON, Grand Ledge, Mich.

O. I. C's.—Two Good Last spring boars. A fine lot of gilts and fall pigs on hand. OTTO B. SCHULZE, One-half mile west of Depot, Nashville, Michigan.

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

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

O. I. C.—Swine, Holstein Bull calf, Bf. R. and White Leghorn Chicks. Write me your wants. FRED NICKEL R. No. 1, Monroe, Michigan

O. I. C.—18 months and 4 months boars. Also taking orders for spring pigs. Oak View Farm, N. H. Weber, Prop., Royal Oak, Michigan

O. I. C.—16 sows bred for spring farrow, 30 fall pigs, large and growing. Write me your wants. GLENWOOD STOCK FARM, Zeeland, Mich.

DUROCS—Spring pigs all sold. Fall pigs, either sex. Prices reasonable. S. C. STAHLMAN OHERRY LAWN FARM, R. 2, Shepherd, Michigan.

Duroc Jersey Gilts of the large heavy boned type, bred for April farrow. Also fall pigs pairs not akin. F. J. Drott, Monroe, Mich. Route No. 1.

Fancy bred Duroc Jerseys—Boars & Gilts of spring & summer farrow. Good individuals at reasonable prices. John McNicoll, Station A. R. 4, Bay City, Mich.

KORN-EL STOCK FARM now offer Duroc Jersey pigs of either sex at reasonable prices. E. R. CORNELL, Howell, Michigan.

DUROCS—36 High Class immune boars ready for service. Special prices for 30 days. Write or come and see. J. C. BARNEY, Coldwater, Mich.

DUROC JERSEY BRED GILTS to farrow in March and April of the best blood lines. W. O. TAYLOR, Milan, Michigan.

DUROC JERSEYS—20 Bred Gilts for Sale CAREY U. EDMONDS, Hastings, Michigan.

DUROCS—Fall yearling sows and spring gilts, bred for March and April farrow, bred to two of the best bred boars in the state. Also a few boars, (all immune.) Come or write. H. G. KEESLER, Cassopolis, Mich.

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

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

LARGE TYPE P. C. A few boars left. Am booking orders for bred gilts. Bred to Young Hadley, Big A Wonder and Big Defender. H. O. SWARTZ, Schoolcraft, Michigan.

POLAND CHINAS—The large prolific kind; bred gilts at farmers prices. ALLEN BROS, Paw Paw, Mich.

BUTLER'S Big Bred Prolific Poland Chinas. Grow big, keep easy, mature early, ready for market in 6 months. Why? Because we've bred them that way for 20 years. Buy a bred sow or some pigs now, and make more money. 50 bred sows, 100 fall pigs. Poland China history free. J. O. BUTLER, Portland, Mich.

Poland China—Sows bred, also summer and fall pigs, from large, prolific sows. Barred Rock cockerels, \$1 each. ROBERT NEVE, Pierston, Mich.

Poland China Bred Sows Fall Pigs and Minoras guaranteed. R. W. MILLS, Saline, Michigan.

POLAND CHINA Bred sows and fall pigs at prices. G. W. HOLTON, R. No. 11, Kalamazoo, Mich.

Large Type P. C.—Bred gilts ready to ship weighing from 300 to 325 lbs. Sired by and bred to the largest boars in the state and from dams weighing up to 600 lbs. Come and see and be convinced. Expenses paid if not as represented. W. E. LIVINGSTON, Parma, Mich.

30 Poland China Fall Pigs—Good ones from immune sows \$10 and \$15 each, while they last. Bred sow sale Feb. 27th, send your name for catalog if you want to buy Big Types with Quality. Wm. Waffle, Coldwater, Mich.

MULEFOOT HOGS FOR SALE, Both Sexes, all ages. C. F. BACON, Milan, Michigan.

Mule Foot Hogs—All ages for sale. Big growthy, prolific, profitable, healthy. Write for what you want. G. C. KREGLOW, Ada, Ohio.

PUBLIC SALE OF MULE FOOT HOGS Jan. 27, 1914, at Findlay, Ohio. 50 head of bred sows and gilts selected from America's 1913 champion show herd. For catalog and information, address: LONG BROTHERS, ALVADA, OHIO.

350 BIG TYPE MULE FOOT HOGS—America's (Champion Herd. Prolific, hardy. Best for Mich. Also Ponies, J. DUNLAP, Box M, Williamsport, Ohio

YORKSHIRES—Boars all sold. Have a few sow pigs being held for last of April and May farrow. OSTRANDER BROS, Morley, Mich.

YORKSHIRE Swine—Boars and gilts all sold. Aug. farrowed pigs, pairs not akin, for sale. Special price on trios. Geo. L. McMullen, Grand Ledge, Mich.

YORKSHIRES—For sale Yorkshire gilts, bred for April farrowing. MEADOWLAND FARM, Waterman & Waterman, Ann Arbor, Mich.

YORKSHIRES—The large, long-bodied, heavy-boned prolific kind. Sows and gilts bred for spring farrow. 60 head of September, October and November pigs. Prices reasonable. W. C. COOK, R. 42, Ada, Michigan.

Lillie Farmstead Yorkshires

Spring gilts, splendid ones. Fall pigs, either sex. Gilts bred for Spring farrow. COLON C. LILLIE Coopersville, Michigan.

New Idea Spreaders

Pulverize and Spread a Load in Three Minutes



They cover from 5 to 7 feet every trip and do it right. Never choke or clog, easy to load and easily pulled. If your aim is to do more and better work in less time, investigate this

100 Point Spreader

Because it is gearless, the machine is practically trouble-proof. Of simple, but substantial construction. So durable that last year, repairs were less than 12c per machine. Study illustration below! Besides 2 cylinders, there is a special distributor. The gearless drive transfers power direct from rear axle to cylinders. The steady, none-jerking feed has 4 ranges. These and many other unique features cause business farmers to call the New Idea "The Best Spreader On Wheels".

Write for Catalog Now FREE

Explains spreader construction in detail. Leaves no question unanswered. Fully illustrated. Shows how we turn out 10,000 machines a year to satisfy 10,000 particular spreader buyers. Ask for this catalog today.

New Idea Spreader Co.
Box 13
Coldwater, Ohio

As Low as \$10

And any boy can operate it and earn the price of this saw in two days easily by contracting to saw lumber, firewood, lath, fences, posts, etc., for neighbors.

Hertzler & Zook Saw

Portable Wood

is positively cheapest and best. Guaranteed 1 year. Our \$10,000 bond protects you. Strictly factory prices—you save jobbers' profits. Stick sits low—saw draws it on immediately machine starts—ensuring ease of operation. Only \$10 saw to which ripping table can be added. Money refunded and freight paid both ways if unsatisfactory. Write for catalogue.

HERTZLER & ZOOK CO.
Box 23, Belleville, Pa.

JOE WING SAYS:

The Excelsior Clover and Alfalfa Drill will revolutionize agriculture in America.

Order one of these Govt. Endorsed Machines for your farm and secure a perfect stand of clover or alfalfa.

Drop us a card now for complete details of field trials in your vicinity and our series of Educational Bulletins.

EXCELSIOR DRILL CO.
Dept. 8, Springfield, O.

Potato Profits

depend largely on how the crop is planted. Every skipped hill is a loss in time, fertilizer and soil. Every double wastes valuable seed. It means \$5 to \$50 per acre extra profit if all hills are planted, one piece in each. That is why

IRON AGE 100 Per Cent Planters

often pay for themselves in one season on small acreage. They also plant straight, at right angles, 12 to 24 inches apart. No angle steel frame and to steel seed hopper. With or without fertilizer distributor. Ask your dealer to show you this Planter and write us for booklet, "100 Per Cent Potato Planting" and copy of Iron Age Farm and Garden News.

BATEMAN MFG CO.
Box 1045, Grenloch, N. J.

A NEW ROOF FREE

You get it at any time within thirty years of purchase if your

AMERICAN INGOT IRON ROOF

rusts out. Being pure iron it cannot rust out like steel. No paint or repairs. Our bond protects you. Fire-proof, lightning-proof. Catalog FREE.

We make All-metal Corn Cribs, Stock Tanks, Troughs, etc. Write for our illustrated book.

The American Iron Roofing Co.
ELYRIA, O. Sta. 12, MIDDLETOWN, O.

SAW YOUR WOOD

RUNS EASY No Backache weighs only 41 lbs. EASILY CARRIED

With a FOLDING SAWING MACHINE, 9 CORDS by ONE MAN in 10 hours. Send for Free catalog No. E44 showing low price and LATEST IMPROVEMENTS. First order secures agency.

Folding Sawing Mach. Co., 161 W. Harrison St., Chicago, Ill.

Practical Science.

CITY MILK SUPPLY.

BY FLOYD W. ROBISON.

Cleanliness on the Dairy Farm.

We have observed that the two great factors at the command of the dairyman to assist him in the production of good market milk is the exercise of extreme cleanliness and cold. We have laid great stress on these two factors for neither one, in the ordinary operation of affairs on the farm, can be observed to excess. It is not possible for the dairyman to overdo the matter of cleanliness and sanitation in the production of milk, and it is not ordinarily possible for him to cool the milk too thoroughly nor too rapidly.

By cleanliness the contamination forces are not permitted to get a foothold in this culture medium. By cold they are not permitted to operate when they do get in. There has been a certain class of food manufacturers and food producers who have thought of the possibility of the use of chemical preservatives. Very wisely, indeed, have the lawmakers stepped in to prevent this expedient, for the use of chemical preservatives does not purify the milk, and at the same time introduces the questionable factor at least of the preservative used.

The pasteurization of milk is somewhat along the same line as the use of preservatives but if properly conducted, of course, has some distinct points in its favor.

The great problem, therefore, in the supplying of milk to the city is to supply a milk of such a standard cleanliness that in the time intervening between the production of that milk and its consumption it has not developed great impurity. We have shown considerably in detail and indicated by the length of time which ordinarily elapses between the production and the consumption of milk what may happen if a milk is allowed to become contaminated by unclean materials at the start. It has seemed strange to farmers that so much objection could be raised by city consumers to milk which, as we have explained, from their own experience, they always had considered of very good quality, but we now know that through the long period of transportation, with altogether too high temperatures, or rather temperatures too favorable for the rapid development of bacteria, what may happen to a milk which the ordinary senses would not condemn when first produced but which, after a period of some hours, had become very impure indeed.

Where Shall the Dairyman Commence?

Now, what are these factors which enter into the dairyman's end of the line to cause these undesirable conditions in milk by the time it has reached the consumer? We think in this discussion we may leave out of consideration the question of the health of the animal itself, for while we have found that a great many of the milk-producing animals of the state are afflicted by one or another infectious disease, these factors are rapidly being overcome and such stock rapidly weeded out by competent inspection. The question of the cleanliness of the animal herself is an item of very great importance. It seems that there is no longer any real excuse for the marketing of milk from an unclean animal. It was only two or three years ago that we were compelled to, upon inspection, stop the sale of milk from a who's herd of pure-blooded stock simply because the animals themselves were not in condition so that wholesome milk could be produced. It was physically impossible for any milker to produce pure milk, or anywhere near pure milk, under such conditions. A glance into the horse stable at this place showed evidence of considerable care in the grooming of the horses and in the cleaning of their stables, and when we suggested that a little of this attention might with greater profit be spent upon the cows in the stable, it seemed to be a matter of great surprise to the farmer that any attention should be paid to this detail at all.

The Value of the Score Card System of Inspection.

A great deal of credit for the improving of conditions, as far as cleanliness is concerned, is due to the use of the score card system of scoring dairy farms. The question of the immediate surroundings and conditions surrounding production of milk are the all-important factors

in the securing of pure milk supply. We think probably the application of studies in bacteriology to the production of milk has been at first instance the impetus which has made progress in this direction possible. Dairyman as well as others have not readily accepted the findings as brought about by the bacteriological study of milk, but nevertheless these studies have revealed the truth and, as in all lines of endeavor, when once the truth keynote is struck, no matter how bitterly opposed it may be, it will eventually win out. It has taken years of endeavor in dairying, but farmers' institute workers have been preaching the doctrine for a long time; food inspectors and sanitary experts have been unsparing in the time and attention they have given to these details uncovered by bacteriological findings.

But the farmer has not known how to remedy these conditions which would cause improvement. He has not known where to begin and what essentials to inaugurate in order to bring about the desired results. It is the score card as shown in the United States score card for city milk inspection that is quite generally adopted by the state and municipal inspectors throughout the United States. In this score card the various points which have bearing in the production of pure milk are tabulated and given their respective places of importance. Of first consideration we may say we have the health of the herd. Of course, with a herd of cattle in an imperfect state of health it is impossible to produce pure milk, no matter how the other details may be worked out or what attention may be given to them. So the health of the herd is given an important place in the scoring of the surroundings of a dairy farm. Then there is the cleanliness of the cows. Cows must be clean. Their flanks and udders must not be covered with filth or dust, and some system must be adopted by the dairyman to make it possible, with a minimum amount of work, to keep his stock in a clean condition. Various expedients are used for this purpose. In some of the more modern farm dairies a vacuum cleaning system is used. By means of a gasoline engine and pump connected with long tubes in the barn, vacuum combs and brushes are used on the cows and they are kept in a remarkable state of cleanliness by the intelligent use of this system. The adoption of a desirable type of dairy stall will assist very materially in this item as well, and there are numerous ways in which this condition may be brought about, and without any apparent investment. A curry comb and brush used in the good old-fashioned way will be sufficient. Then such a detail as the kind of bedding used, and the way in which it is used; the condition of the floor; the condition of the ceiling overhead; these are items that are taken into consideration by the inspector when using the score card system. The score card likewise takes advantage of the very necessary requirement of a certain amount of light for each animal in the stable. The admission of sunlight is very intimately associated with the production of pure milk and is considered one of the most efficient germicides known, a germicide which not only has its effect on the conditions of cleanliness in the stable but affects as well the health of the stock.

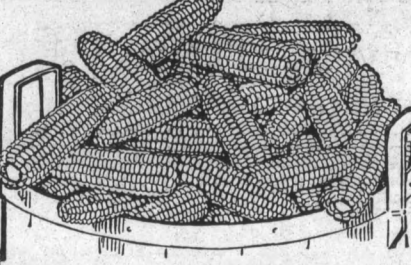
(Continued next week).

CATALOG NOTICES.

Case Threshing Machinery is fully illustrated and described in a handsome 90-page art catalog published by J. J. Case Threshing Machine Co., Racine, Wis. In it a full line of steam, traction and portable engines, gas and oil tractors, threshing machines, horse powers, tractor plows, corn shellers, alfalfa mills, hay presses, road machinery, etc., with detailed illustrations of construction, descriptions of equipment, etc. If interested in machinery of this kind, write the above company, mentioning the Michigan Farmer.

The Brown Fence & Wire Co., Cleveland, Ohio, will send upon request a convenient catalog of their fence and farm gates, which include self-raising style of gate, and ornamental as well as serviceable fencing for farm use. Write them for literature, mentioning this paper.

"Strawberry Plants that Grow," is the title of the 1914 catalog published by C. E. Whitten's Nurseries, Bridgman, Mich. This catalog lists other small fruits as well as strawberries, which are made a specialty by this firm.



80 to 100 Bushels per Acre with

Fish Brand Fertilizers

Drilled 200 to 400 lbs. to the acre, Fish Brand Fertilizer will make your Corn Crop surer and bigger.

Write for copy of "Six Mighty Good Reasons Why You Should Use Fish Brand Fertilizer." Free for the asking. THE JARECKI CHEMICAL CO. Sandusky and Cincinnati, O.

Agents Wanted—Write for Proposition

Use KEROSENE Engine Free!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing. No waste, no evaporation, no explosion from coal oil.

Gasoline Going Up!

Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints of coal oil do work of three pints gasoline.

Amazing "DETROIT"

—only engine running on coal oil successfully uses alcohol, gasoline and benzine, too. Starts without cranking. Only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p., in stock ready to ship. Engine tested before crating. Comes all ready to run. Pumps, saws, threshers, churns, separates milk, grinds feed, shells corn, runs home electric lighting plant. Prices (stripped), \$29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, you get Special Extra-Low Introductory price. Write!

Detroit Engine Works, 149 Bellevue Ave., Detroit, Mich.

LET THE WIND PUMP YOUR WATER FOR NOTHING

WHY PAY FOR GASOLINE WHEN WIND IS FREE! Get a Big, Heavy, Powerful, Light Running, Double Geared

SAMSON WIND MILL

SEND FOR CATALOG We also build Ideal Feed Mills, Pump Jacks, Hand Grinding Mills for Poultry Raisers, Gasoline Engines, Ensilage Cutters and Brass Candle Sticks

STOVER MANUFACTURING COMPANY
311 Samson Avenue, FREEPORT, ILLINOIS

Grinds More Feed Per Gallon Gas

Save 25 per cent of your gasoline bill by using the fast grinding Letz. Grinds all kinds of grain, hay, seeds, screenings or snap corn, wet, dry or oily. Can't clog—force feed throughout.

Letz Self Sharpening Silent Burr

Try it for ten days — if it don't grind finer, faster, cheaper than other mills send it back at our expense. Write today for details, stating H.P. of your engine.

Letz Mfg. Co., 210 East Road, Crown Point, Ind.

400,000 Settlers a Year

Immigration figures show that the population of Canada increased during 1913, by the addition of 400,000 new settlers from the United States and Europe. Most of these have gone on farms in Manitoba, Saskatchewan and Alberta.

Lord William Percy, an English Nobleman says:

"The possibilities and opportunities offered by the Canadian West are so infinitely greater than those which exist in England, that it seems absurd to think that people should be impeded from coming to the country where they can most easily and certainly improve their position."

New districts are being opened up, which will make accessible a great number of homesteads in districts especially adapted to mixed farming and grain raising. For illustrated literature and reduced railway rates, apply to Superintendent of Immigration, Ottawa, Canada, or to the Canadian Government Agent.

M. V. MacInnes,
175 Jefferson Avenue,
Detroit, Mich.

160 ACRE
FARMS IN
WESTERN
CANADA
FREE



Own A Florida Home

Thousands of persons are dreaming and planning to own a little farm some day. Are you one of them? A home with a grove, truck farm, and poultry yard in Florida means independence. Success is easier than failure. Let us help you locate right. Illustrated booklets and "Facts about Florida," FREE.

FLORIDA EAST COAST RY.

J. E. INGRAM, V. Pres., or LOUIS LARSON, Northwestern Room 319 City Bldg., Agent, Room 119 109 West St., Augustine, Fla. Adams Street, Chicago, Ill.

I Will Do Your Tanning Right

I TAN
Horse and Cattle Hides without the use of acids—by a slow, careful, quality-work process exclusively my own—the result of nearly 30 years of practical experience. That's why my hides give maximum wear—and are always soft and pliable—never harsh or oily! I'll make up your horse and cattle hides—or fur skins of any kind—into

Finest-Quality Fur Coats, Ladies' Furs, Robes, Rugs and Mittens

If you're looking for guaranteed work and fair, square treatment, see my agent today—or write direct to me for my new free catalog—handsomely illustrated in colors.

Frank Martin
460 Prospect Ave., Milwaukee

Galloway's ALFALFA

Grows Everywhere, Makes Big Crops

The secret is PURE SEED and knowing how. Galloway's seed and the Galloway system of planting, growing and harvesting, insures success, big profits.

Galloway's Pure Seed Book and Samples Free—just send postal today, or send ten cents and get our new 22-page 25-cent book entitled "How to Grow Alfalfa, the Wonder Crop"—a mine of information—tells how to get a sure "catch," prepare ground, inoculate, protect, harvest and many other new facts and important discoveries.

GALLOWAY BROS.-BOWMAN CO.
185 Galloway Sta., Waterloo, Iowa

CIDER PRESSES

The Original Mt. Gilead Hydraulic Press

produces more cider from less apples than any other and is a BIG MONEY MAKER. Sizes 30 to 400 barrels daily. Also cider evaporators, apple-but-

ter cookers, vinegar generators, filters, etc. Fully guaranteed. Write for catalog.

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

SPOROCIDE SURE CURE FOR SMUT

in oats. Guaranteed Simple to treat. Sent direct by parcel post where we have no agent. Booklet. Agts. Sporicide Chemical Co. N. Y. wanted.

Pulverized Lime Rock

We can ship in carload lots in two days after order is received from Muskegon and Benton Harbor. Write for prices direct to you.

LAKE SHORE STONE CO., Milwaukee, Wis.

BARGAINS, BARGAINS, BARGAINS,

35 piece dinner set \$3.50; Set silver plated knives and forks \$1.50; Pair lace curtains 2 1/2 yards long \$1; Nice table cloth 72x72 \$1; 6 nice face towels 13x23 1/2 50 cents. **STANDARD SALES CO., 35 Main St., New Harmony, Ind.**

Grange.

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

BENZIE COUNTY AND ITS GRANGES.

Benzie county, among the latest of the southern peninsula counties to organize a Pomona Grange, is one of the most interesting in several ways. It is a county of picturesque scenery, of unsurpassed soil and fruit uplands, with a fine great lakes harbor and large shipping facilities. In it is an old seat of educational culture, at Benzonia, which has exerted a recognized influence upon that section of the state for many years. In recent years the development of the western part as a resort region, and the locating of a summer assembly there, has called hundreds of tourists into the county.

For many years the only Grange in Benzie county was Inland, No. 503, of which R. B. Reynolds, well known as president of the State Patrons' Fire and Cyclone Insurance Companies, is a member and to whom deputy oversight and organization of a large number of local Granges are due. This oldest Grange has just completed the rebuilding of its hall and now enjoys the company of seven other subordinate Granges in the Pomona organization. Two others of the subordinate own halls—South Blaine and Loyalty.

In October last, the Pomona met with Almira Grange at Lake Ann. The entertaining Grange has a membership of 70 and right royally served as host. A pleasant feature was that of breakfast for the guests, being served at the hall instead of at individual homes. The local program, in charge of Mrs. Wm. Habbeler, was a great success, being especially strong in its music by the young people. An address, with 100 stereopticon views of Western Michigan, by H. E. Brown, of Traverse City, added much to this program. In the afternoon, County School Commissioner Fewless made a strong plea for the rural schools, having with him the teachers of the county normal training class. Considerable interest was created in the conditions of local school buildings and their possible improvement. This co-operation between teachers and patrons in the Pomona is attributable in large part to the fact that Mrs. S. E. Gaines, Pomona Lecturer, has been upon the school board of her own district for 16 years and is deeply interested in every opportunity to better the schools. She is doing a fine work in both relations, if an outsider can judge the sentiment and spirit in the short time that one Pomona meeting affords, and I think this may be done.

The delegates from this county to State Grange were Master Babcock and wife, of Almira Grange, Mr. and Mrs. John Whiteman, of Benzonia, and Pomona Master E. D. Allis and wife, the latter two representing Pomona. It is interesting to know that Brother Allis is a son of L. F. Allis, Master of Lenawee Pomona, and evidently inherits the stamina and community enterprise which have characterized his family in southern Michigan. As master of Benzie, his lines have fallen in a section of abundant opportunity for Grange extension and effort. With the fruit future of this part of the state looming large before them, the problem of practical co-operation will demand a masterful solution. Will the Grange see its opportunity for leadership and meet the challenge? Time will tell.

JENNIE BUELL

AMONG THE LIVE GRANGES.

Berlin Center Grange, of Ionia county, installed the following officers on Jan. 9, installation being followed by an oyster supper and a short but stirring program: Master, Wade Allen; overseer, Lewis Booth; lecturer, Anna Eddy; steward, Claire Waltman; assistant steward, Mark Harwood; chaplain, Ella Carman; treasurer, Fred Howard; secretary, Earl Adgate; gate keeper, Bert Kimble; Pomona, Neva Woodward; Ceres, Cora Denton; Flora, Viola Carmen; lady assistant steward, Ila Kimble.

Chesterfield's "Christmas Grange."—Members of Chesterfield Grange, Macomb county, closed the old year with another of their extremely enjoyable "Christmas" meetings at the palatial home of Bro. J. M. Hall in Detroit. A special interurban car, furnished by their host, brought the patrons to the city and returned them to their homes after the meeting. The "royal spread" was all that that term implies, while the program which followed it could hardly have been made more enjoyable. The leading feature was a lecture upon the great singers of today and yesterday, embellished through the aid of the stereopticon and the graphophone, the latter reproducing the voices of the greatest singers from the days of Patti down to the present. This was followed by the unbending of a beautiful tree bearing a gift for each person present, guests included, during which the spirit of care-free and joyous childhood seemed to take possession of all.

COMING EVENTS.

Pomona Meetings.

Shiawassee Co., with Laingsburg Grange, at Laingsburg, Thursday, Jan. 29. State Master Ketcham, speaker.

Ingham Co., with Telephone Grange, at Leslie, Friday, Jan. 30. Address by Dr. Ethel Cook Carpenter.

Farmers' Clubs

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

Associational Motto:

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

Associational Sentiment:

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

CLUB DISCUSSIONS.

Hold Annual Meeting.—The Annual meeting of the Ingham County Farmers' Club was held Dec. 13 at Maple Ridge Farm with Mr. and Mrs. J. E. Tanswell. It was a pleasant day and 90 in attendance. The following officers were elected: President, Mrs. Joseph Jewett; recording secretary, Mrs. E. P. Reme; corresponding secretary, Mrs. J. E. Tanswell; treasurer, W. H. Taylor; directors, three years, F. C. Lott, Mrs. Vance Douglas; directors two years, (holding over), Alfred Allen, Mrs. M. A. Bement; director for one year, (holding over), R. J. Robb, Mrs. W. L. Cheney. At a business meeting held Jan. 5 the permanent committees for the year were appointed: Chairman program committee, Mrs. Cheney; chairman locating committee, Mrs. Bement; chairman corn club, R. J. Robb; chairman domestic science, Mrs. Vance Douglas; chairman memorial committee, Judge G. W. Bristol, chairman music committee, Mrs. D. E. Watts; chairman floral committee, Mrs. W. H. Haskell. The January meeting was held Jan. 10 with Mr. and Mrs. J. H. Shafer, who now live in town, having rented their farm north of town. Mrs. W. H. Taylor gave her paper, "Side Lights of Farm Life," and Rev. Corbett, of East Lansing, spoke upon Prohibition. These, with discussions, music, recitations by little folks, and a good substantial noonday meal, made a pleasant day and a great change from the daily routine of chores and housework. Mrs. Tanswell, Cor. Sec.

A Pioneer Program.—The Wise Farmers' Club held a Pioneer meeting at Clover Leaf Farm with Mr. and Mrs. J. H. Seeley, Wednesday, Dec. 10, with a well filled house. After the dinner hour the Club was called to order by the president, W. J. Jennings. Song by the Club entitled, "Where We'll Never Grow Old." Prayer by A. P. McDonald. Address of welcome by the host. Response by M. T. Johnson, who kept the crowd in a jolly mood for 20 minutes with his witty stories. Moses Johnson then gave a short talk on pioneer life and closed by saying the farmer is the most independent of any class of persons. John Phinisey, the oldest resident of Vernon now living in Vernon, followed. He, with his parents, settled in Vernon in 1865 and they were the third family in Vernon. The late Duncan Carmichael was the first white man to settle in Vernon, Isabella county. Mr. Phinisey told of the hardships of hewing out a farm in the woods. Rev. A. P. McDonald related his experience as a pioneer preacher. P. M. Loomis, M. Burch, Rev. Knight and Irwin gave good talks. John Little, Philip VanConant and Mrs. P. M. Loomis gave short talks on the same subject. The three oldest residents present were John Phinisey, Mahon Burch and J. H. Seeley.

Looking Forward and Backward.—The Conway and Handy Union Farmers' Club was pleasantly entertained at the home of Mr. and Mrs. Sumner Grant, Jan. 2. The meeting was called to order by the president; music by the male quartet, followed by prayer by Rev. R. T. Kilpatrick. Mrs. Raymond Allen read a paper on the topic, "Looking Forward." She said in part, that man alone was permitted to enjoy the future; he has the future to enjoy in three different ways: by anticipation, by realization and by memory. Child life is full of anticipation; but he is not inclined to let the tomorrow worry him; he has little to do with yesterday. The world if deprived of the pleasure of expectation would be poor indeed; Christianity tends to develop the spirit of anticipation; it does not teach us to consider the present as final; we should look ahead and make tomorrow greater than today. Our work should make us happy and give us contented minds; we should be enthusiastic. Life is full of fresh opportunities, hidden forces, and glad surprises; and to have a brave heart, there is a way open to expect the advent of something better. The God-filled soul always looks forward to its home where sits the Father radiant amid ten thousand suns. Mr. J. B. Rambo, in speaking of "Looking Backwards," gave an interesting talk upon things as they "used to be." He spoke of his early home; explained the structure of the fire-place and the bake oven. He said that everything used in the home was made by hand. His home was in the neighborhood of Ypsilanti; and he told of being able to see the shores of Lake Erie which at that time was not a great distance from Ypsilanti. He told of the old church of the Puritan type; told of the old singing schools and the fine singing they used to have. A portion of the report of the state meeting was given by Clay Gordon and the remainder is to be given by Mrs. Gordon at the next meeting. Election of officers then took place. George Stowe was re-elected as president; Alton Grant, vice-president; Mrs. Alton Grant re-elected secretary, and Mrs. Clay Gordon, corresponding secretary. Club adjourned to meet with Mr. and Mrs. George Stowe, Jan. 30.

Get My Big FREE BOOK OF Buggy Bargains

I am proud of it! It is the best buggy book ever issued. I want you to have it, even if you don't think you will buy a buggy this year. It tells the story—how my buggies are built, how they are tested in ways no "store buggy" can stand, illustrates many finished "jobs" in colors, tells how to select your own choice as to style, color, upholstery, etc.; best of all, it proves that when you buy a BOHON "BLUE GRASS" BUGGY, you

SAVE \$25 TO \$50

You see I sell direct from my factory—no dealer, agent or salesman to draw profits or expenses. It's all explained in this book, together with my 30-day free road trial offer, etc. Send for the book—a postal will do. DO IT TODAY.

D. T. BOHON
206 Main St., Harrodsburg, Ky.

Guaranteed STEEL ROOFING

Right From the Factory

When you buy roofing from us you know before-hand just exactly what you are going to get. Your order will be filled under

Our Guarantee

that every sheet must be perfect, full weight, brand new, or it doesn't cost you a cent. This kind of roofing is always cheapest in the end. We sell it to you for the same or less money than the ordinary competitive quality roofing. We sell you direct at exactly the same price your dealer would have to pay us and besides

We Pay the Freight

Our price list shows exactly what your roofing would cost laid down at your railroad station. Send today for catalog and samples Free.

The Ohio Galvanizing & Manufacturing Company
27 Ann St., Niles, Ohio

Manure Spreader \$64⁷⁵ Prices Slashed! 64^{Up}

My low direct-from-factory prices will save you \$25 to \$50. My prices on complete spreaders, \$64.75 to \$79.50. Attachments only \$39.50 up. Think of it! Prices never before equaled. Lowest ever made! Write today—act quick. These special prices good for 60 days only.

30 Days' Free Trial

Backed by a \$25,000 legal bond. Five year warranty. 40,000 Galloway spreaders now in use. Proved best by actual test. Get my catalog and special 1914 offer and lowest special prices. WRITE TODAY—ACT NOW!

WILLIAM GALLOWAY CO.
189 Galloway Station (440) Waterloo, Iowa

Eureka Send for Catalog—FREE

Potato Planter

Profitable for the large or small grower. Plants potatoes at lowest possible cost. One man operates it. Opens the furrow—drops the seed any distance or depth required—puts on fertilizer (if wanted)—covers up—marks the next row. Accurate, automatic and dependable. Sold with or without Fertilizer Attachment.

Here's why you should select the Eureka Potato Planter:—Furrow Opening Plow is directly under the axle—that means uniform depth at all times. The seed drops in sight of driver. Steel and malleable construction makes long life and few repairs. Made in three sizes—for one, two or four rows.

We also make the Eureka Mower and Seeder. Shipped from branch near you.

EUREKA MOWER CO., BOX 822, UTICA, N. Y.

LET US TAN YOUR HIDE.

Cattle or Horse hide, Calf, Dog, Deer or any kind of skin with hair or fur on. We tan and finish them right; make them into coats (for men and women), robes, rugs or gloves when ordered. Your fur goods will cost you less than to buy them, and be worth more. Our illustrated catalog gives a lot of information which every stock raiser should have, but we never send out this valuable book except upon request. It tells how to take off and care for hides; how and when we pay the freight both ways; about our safe dyeing process which is a tremendous advantage to the customer, especially on horse hides and calf skins; about the fur goods and game trophies we sell, taxidermy, etc. If you want a copy send us your correct address.

The Crosby Frisian Fur Company,
571 Lyell Ave., Rochester, N. Y.

PUMP GRIND SAW Made for Hard Use

Wood Mills are Best. Engines are Simple

Feed Grinders, Saw Frames, Steel Tanks

CATALOGUES FREE AGENTS WANTED

Perkins Wind Mill & Engine Co. Est. 1860
130 MAIN ST. Mishawaka, Ind.

Lansing, Mich., Feb. 18, 1913.
Dear Sirs:—About five years ago I bought some Unito Barn and House Paints from you, which was very satisfactory. Will you please send me your prices on your paints and varnish stains,

as I think of doing some painting this spring.
Hillsdale, Mich., Dec. 23, 1913.
Dear Sirs:—The roofing came O. K. and am well pleased with it. I think I can get you more orders here as all that

have seen the roofing think it the best for the money.
Oxford, Mich., Dec. 8, 1913.
Gentlemen:—We have used Unito Paint almost exclusively for five years and find as for durability it equals if not excels

any other paint used in our vicinity. Therefore as long as Unito keeps up its high standard we will continue to spread it. We surely can recommend Unito Paints and varnishes.
MILLER & DAVIS, Painters.

A New Way to Buy by Mail— Send No Money

Here is a brand new idea in buying by mail. Nothing like it ever offered you before. My plan is safer, better more convenient and satisfactory. It is simply this: **YOU SEE AND TRY THE GOODS BEFORE YOU PAY A CENT.** It is the only **RIGHT** way to buy anything. It cuts out all risk—all chance of disappointment—all question whether goods are as represented. You are the final judge before you pay out your money.

No Deposit Required—No Papers to Sign—No C. O. D. to Pay

No fussing with freight or express agents before you see the goods—no bank deposits to make for someone else to hold your money while you make the test—nothing to do but order the goods—take them home—examine them at your leisure and test them 30 days before you pay any one a penny. It is a plan that pleases everybody. It is far better than seeing the goods in any store. It enables you to purchase direct anything our 33 United Factories make at surprisingly big savings in cost.

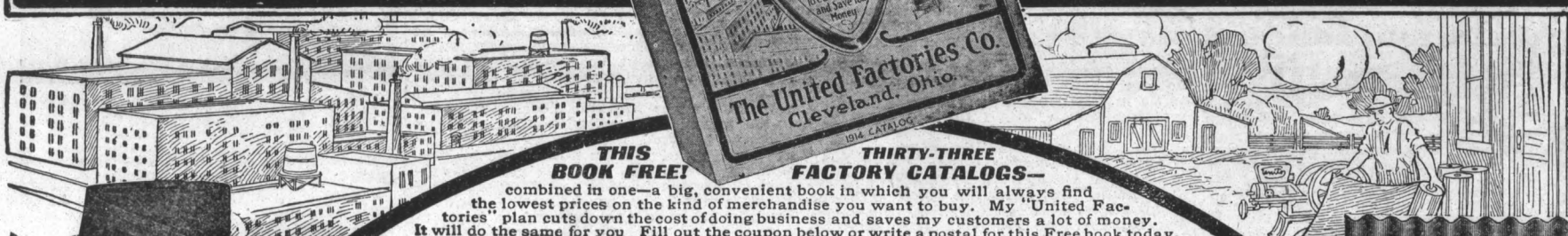
If you need Roofing, Paint, Fencing, a Gasoline Engine, Stove, Feed Cutter, Sheller, Grinder, Sewing Machine, Furniture, etc. send for our latest factory prices and Combined Free Catalog right away so you can try this new plan of seeing what you get **BEFORE** you pay. I trust you with the goods because I know their high quality and I am not afraid to let you see and try them before you pay. Send coupon for Free Catalog today. Address

GEO. A. BOTTGER,
President of The United Factories Company and originator of the plan to let you SEE and TRY the goods BEFORE YOU PAY.

SEE The Goods Before You Pay



TRY Them 30 Days Before You Pay



BIG CUT IN ROOFING PRICES

90c A roll for Unito Challenge Roofing is all we ask—an unheard of price on roofing of this quality and weight. Anyone who can use a hammer can lay it.

We also offer Unito Diamond Coat Roofing—a handsome everlasting covering, particularly fine for residences, barns and public buildings. Unito Prepared Roofings are all made of long fibre, all wool felt, thoroughly saturated with pure mineral asphalt and heavily coated. They are water proof, leak proof, wind proof and won't taint water. Nails, cement and directions for laying included Free. Write for samples

There never was a time when you could buy so much roof protection for so little money as you can today. The astonishingly low prices from all our factories on all grades of Unito Prepared Roofing, Excell Metal Roofing—galvanized or painted, offer you an opportunity which you can't afford to miss.

ILL SHIP YOUR ROOFING BEFORE YOU PAY.

Send No Money. My new way of letting my customers "see-the-goods-before-they-pay" is a big winner. It is the safe way to buy anything. Just tell me what kind of a building you want to cover and I'll ship the roofing, let you take it home—examine it—test it—put it on your buildings—give you 30 days' trial before you pay. If for any reason when goods arrive you are not satisfied—send them back, I'll stand all freight charges. You won't be out a cent. My factories stand back of me—I stand back of my goods. Write for Samples. **GEO. A. BOTTGER, Pres.**

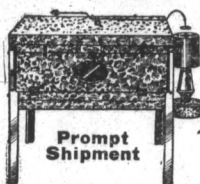
Prices Are DOWN on Excell Metal Roofing

Just now we can make you very low prices on all kinds of metal roofing. If you want a roof that will never rust, rot, dry out, crack, tear loose or leak, order Unito Excell Galvanized Roofing—the best made. It is easy to lay—no tools required—no experience necessary. Write for samples and special prices.

Unito 135-Egg Incubator

and 135 Chick Brooder—
Both For **\$9.45**

Incubator is hot water heat, galvanized covered, solid redwood interior, fully guaranteed. You can order this incubator—See it before you pay—Try it 30 days before you pay. Get one hatch from the incubator—Prove its worth before you risk one penny. This is a big bargain you can't afford to pass by.



Why United Factories Prices Are Lower

and the values we give **BETTER** than any ONE factory operating alone can possibly offer you. On this page I show the advertisements of several of my factories. Suppose each one of these factories had used a page advertisement like this to call your attention to their products. Don't you see how it would mean 8 or 10 times the cost of this one advertisement, which amounts to but little when divided up equally among 33 UNITED FACTORY departments? Suppose you should write to each of these 33 factories for their 33 different catalogs, it would not only cost you more for postage and make you far more trouble, but the cost of sending all these books to you, including the postage, would be almost 33 TIMES THE COST of printing and sending you this one big combined FREE catalog of UNITED FACTORIES PRODUCTS. All these things mean an added expense of doing business, and that of course means higher prices for you to pay, because in the end, the manufacturer must add every penny of expense onto the price he gets for what he makes. You not only avoid ALL middlemen's profits, but all other unnecessary expense when you deal with the United Factories.

MY PLAN saves you time, freight, trouble and expense. NOW is the time to get acquainted with us, then you will know how we can help you when you are ready to buy. Send the coupon today and get our Free Combined Catalog.

Save Money on Paint Pay in 30 Days if Pleased



Prices from Factory No. 3 on Unito Guaranteed Paint will probably never again be as low as they are right now. The cost of paint ingredients has been steadily advancing—but you can still buy Unito Paint for House, Barn, Silo, Implements, etc., at the old price. Don't let your buildings go through another season unpainted. We will ship your order quickly and without pay in advance. Fill out the coupon and mark an X before paint if interested. Send for helpful book, "Paint Hints and Color Helps." Also card of Color Samples—Free.

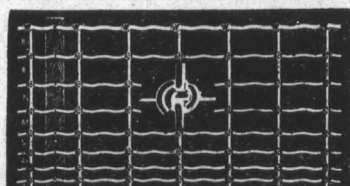
GEO. A. BOTTGER, Pres.
The United Factories Co.,
216 United Factories Bldg., Cleveland, Ohio.
Dear Sirs—Please send me without cost, your big combined catalogs, which explain your money saving selling plan and your liberal offer to let me "see and try the goods before I pay." I have placed an X before the articles that I am interested in.

- | | |
|--|---|
| ☐ UNITED Paints | ☐ UNITED Fence |
| ☐ UNITED Ready Roofing | ☐ UNITED Stoves |
| ☐ UNITED Wall Board | ☐ UNITED Vehicles |
| ☐ UNITED Excell Metal Roofing | ☐ UNITED Harness |
| ☐ UNITED Gasoline Engines | ☐ UNITED Sewing |
| ☐ UNITED Incubators | ☐ UNITED Machines |
| ☐ UNITED Farm Implements | ☐ UNITED Furniture |
| ☐ UNITED Cream Separators | ☐ UNITED Pianos |



No. 5501 **FINE SINGLE STRAP HARNESS**
Breast Collar Style
\$10.98

Use it 30 days—if not all satisfactory and a good buy for the money—send it back. Write for catalog of single and double harness, showing a fine line of buggy harness and buggies. Our plan enables you to make any selection on the favorable terms outlined. **See before you pay.**



Factory No. 4 offers cut prices on high grade wire fencing and 30 days' FREE Trial on your own farm before you pay.

Let This UNITED Engine Work for YOU

FREE for 30 DAYS

\$27.75 and up buys a UNITED Gasoline Engine—Fully Guaranteed. There is only one way for you to really know what any engine will do for YOU and that is to try it on your own farm. That is why we make you an offer no other manufacturer has ever dared to make. You can try this 5-year Guaranteed Engine 30 days—PAY IF PLEASED.



I can't possibly show all of the United Factories lines here. You will find them all in my Free Combined Catalog. If you want to get the full benefit of the big saving and convenience this new plan affords fill out the coupon at left or just write me a postal today saying: "Send me your Free Catalog of United Factories Products." Address **GEO. A. BOTTGER, President**

THE UNITED FACTORIES COMPANY 216 United Factories Building CLEVELAND, OHIO

Name.....
Town.....County.....
R. F. D.....State.....