

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY.
ESTABLISHED 1843.

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

VOL. CXLIV, No. 9
Whole Number 3824

DETROIT, MICH., SATURDAY, FEB. 27, 1915.

50 CENTS A YEAR.
\$2 FOR 5 YEARS.

PEACH GROWING AS A SPECIALTY.

By F. M. BARDEN.

PEACH culture has been linked with the west coast of Michigan for the past one hundred years, yet has been considered of commercial importance for only about one-half of this period. The accounts of the profits realized by those who first embarked in the business read like fairy tales and, as we would expect, neighbors rushed into the occupation after the same manner that men flock into a new gold field, and the results were quite similar. With virgin land, freedom from insects and diseases, and fabulous prices for their product the pioneers at the business seem to have had opportunities that are sufficient to kindle a spirit of envy in the mind of the would-be-grower of the present time. Yet there were many failures then, thus we would logically expect that a large number of modern growers would not succeed in realizing the profits that seem possible for others. The history of peach culture in the state shows that the growers have had many ups and downs, yet in spite of the many "yellow streaks" exhibited in its character, the fruit has such a magnetic power over humanity in general that every year witnesses the planting of thousands of new trees.

The apple is considered the king of Michigan fruits, but he gladly accepts the peach for his blushing bride and the queen is only deprived of the place of complete supremacy by her delicate constitution and exacting habits. While there are certain locations in the interior of the state where peach growing has proved very profitable, still its true home seems to be in a strip a few miles wide extending along the west coast of the lower peninsula. It is generally the rule that these interior points are favored with good home markets which are anxious to receive the product at a good price, but lack of protection from low temperatures both in winter and at blossoming time, causes a great uncertainty in the business. Although there are many sites in the territory adjacent to the lake that fail to produce annual crops, yet there are a large number of locations that do, and this is what determines the real profit. Some orchards will bear a heavy crop, then jump one or two years before producing another. In such cases the crop year generally occurs when every orchard is bearing, and the result is low prices and a consequent lack of profit. It is the orchard that is not allowed to overbear in any one year, but produces every year that brings profit to the owner.

Some growers have been successfully producing peaches for many years and to such as these this par-

ticular fruit is just about as dependable as the wheat crop is to many of the leading grain growers. True it is that there is much of a speculative nature for one and all that embark in the peach business, but the odds vary largely with the location. While there are many other reasons given for failure or success, they may nearly all be summed up in one sentence, and that is "the man behind the proposition." It is common for certain individuals to see nothing but failure and their methods seem to be developed with that object in view.

While there are many varieties of peaches, and all undoubtedly have vir-

against varieties with white flesh, and the past few years there has been a very small demand for that kind of peaches. In deciding upon the best sorts for the particular site it is nearly always necessary to have grown peaches there before in order to make the best choice, then there is liable to be a mistake. However, it is very noticeable to a grower of experience that certain varieties thrive better upon his farm than others, and he is very sure to consider what might have been the outcome financially if he had been wise enough to have planted only those varieties that have proved to be the most profitable for him. But this

when needed for the peaches. The Elberta is the leading peach of the present. Many individuals are not planting any other and from present appearances the future Michigan peach season will begin and end with this variety. However, there was a time when the cry of the market was for the Crawford peach and many varieties were sold for this sort that bore no relation to it. Thus it is possible that the coming years will see another variety in the place of distinction now held by the Elberta.

There is a certain cultural system that is followed by most of the best growers, although it is subject to variations with the different individuals. In general this consists of pruning, spraying, thinning and the thorough cultivation of the land during the growing season with the use of cover crops at the close. While it is impossible to discuss these in detail in the present article, yet, to prevent the uninitiated from gaining the impression that these are trivial matters, it is best to state that the time devoted to these operations, combined with the harvesting period, is sufficient to keep the grower busy during the greater part of the year. The profits at harvesting time are very dependent upon the care that the producer has exercised in performing the various acts that have been enumerated above. A failure to execute any of the tasks as they come with the advancement of the season may mean a large financial loss in the final reckoning. Upon the other hand, if every known duty is promptly performed in its season the result is quite sure to be very gratifying to the investor.

It is becoming more evident every year that the fertility of the orchard land must be maintained or the result is starved trees and consequent failure in crops. A healthy, vigorous tree is much more resistant to winter injury than the one which has been weakened by the lack of plant food. The system to be followed in accomplishing the desired results in this line is dependent upon local conditions and must be worked out by each grower for his particular site.

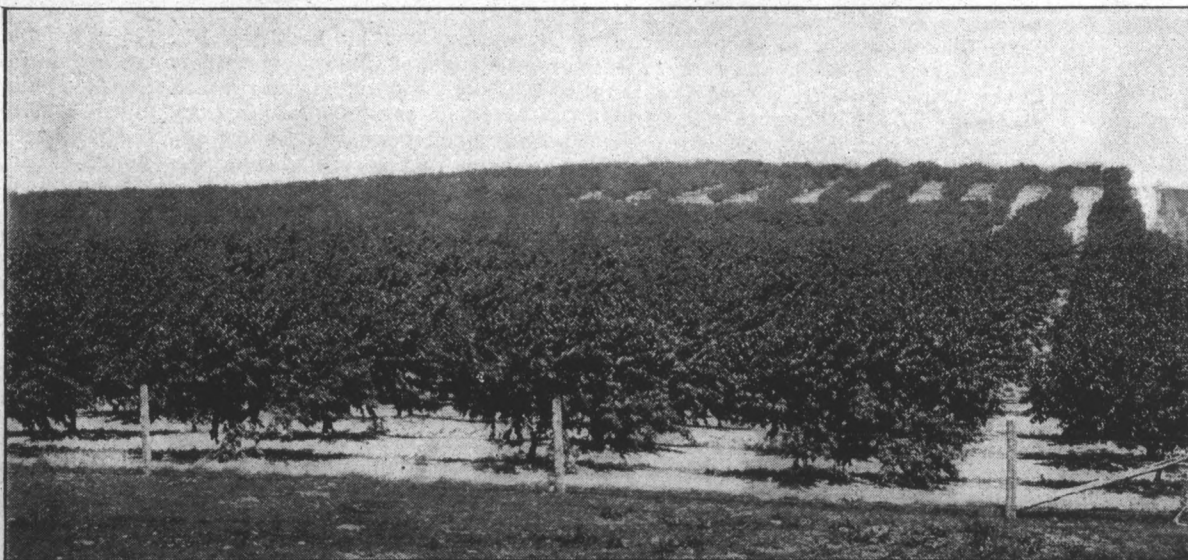
Peach diseases have played a very important part in the financial end of the business. For the individual or locality that is called upon to withstand the ravages of either the "yellows" or the "little peach," there is sure to be a loss. However, other growers realize a profit due to decreased production and consequent higher price. As the diseases seem to visit all localities to a greater or less extent and generally allow some time to



Thrifty One-year-old Orchard with Corn Between Trees. Five-year-old Orchard in Background.

tues, still commercial growers make use of only a small number. If one is able to raise the fruit it is a pleasure to have several varieties that have a ripening period so arranged as to cover the entire season. However, this system is not generally the most profitable if the individual is producing for market. The first thing to consider in the choice of varieties is the market that is to be supplied, the second is the adaptability of the location for certain varieties, and the third is the labor proposition. Most markets accessible to Michigan discriminate

brings us to the point of considering the labor question. It is possible for the grower to confine himself to one or two varieties and be able to obtain the help necessary to care for the crop, but in many sections he would encounter difficulty. The judgment of the individual is a very important item at this point, or he will fail to have the help at just the right time to handle the crop. If only one or two varieties are grown the producer should raise other kinds of fruit that will join on to the peach season, thus being more certain of having the help



A "Frost-proof" Location and Good Care Are Two Great Factors in Making Peach Growing a Success.

TRY TEN DAYS FREE **SAVE \$20 ON SHOE BILLS**

RUTHSTEIN'S LATEST TRIUMPH Leather - Tapped "Steels"

The only Practical, Comfortable, Light, Long - Wearing, Absolutely Waterproof GENERAL SERVICE SHOE for Men and Boys. One Pair Outlasts 3 to 6 Pairs ALL-Leathers.

Here's the Best and Only "year-round," "all-purpose" Shoe ever invented. Warm in winter—Cool in summer—Always dry and shapely. Made in all sizes and heights—for Men, sizes 5 to 12; 6, 9, 12 and 16 inches high; for Boys, sizes 1 to 4. For Farmers, Mechanics, Dairy, Creamery and Stock Men, Laborers, Fruit and Vegetable Growers, Sportsmen. The World's Greatest Work Shoe—Play Shoe—School Shoe

SAVE YOUR HEALTH AND MONEY

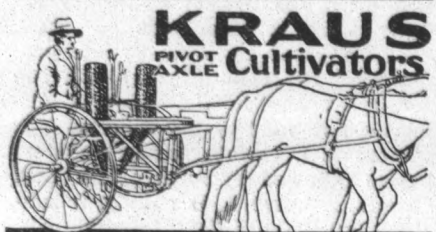
No More Big Doctor's Bills
No More Big Shoe Bills
No more wet, tired, blistered, calloused, chafed, aching feet. No more hard, cracked, warped, twisted, leaky shoes. No more Rheumatism, Lumbago, Sciatica, Coughs and Colds. No more loss of time and health. Always Comfortable—Always Dry. Save \$10 to \$20 shoe money.

STEEL SHOE BOOK—FREE

"The Sole of Steel" illustrates and describes this wonderful money-saving Shoe with its Special Process, Long-Wearing Adjustable Leather Taps—Instantly replaced when worn for a few cents. The shoe of the light, springy step—the shoe that makes you sure-footed and tireless—the shoe that protects your Health—Your Comfort—Your Purses. It tells how YOU—or anyone—can TRY MY "STEELS" TEN DAYS, FREE. Address your postal to

N. M. RUTHSTEIN,

The Steel Shoe Man, Dept. 126, Racine, Wis.



Read This!

The KRAUS brings better crops, with less time, labor and expense, BECAUSE—
Slight foot pressure shifts wheels and gangs to right or left; horses furnish the power, the driver only steers. Cultivates hillsides, uneven land and crooked rows and brings new land under cultivation. Dodges obstructions; leaves no end hills. Fully adjustable, light draft, perfect balance, least wear and tear. Your boy can run it.

Get Good Crops During Backward Seasons

By equipping the KRAUS with Akron Fertilizer Distributor and apply fertilizer while cultivating. Strengthens the plants and hastens their development. Write Today and let us explain other features.

The Akron Cultivator Company,
Dept. 62 Akron, Ohio

Here Is the Biggest Piece of News in the History of Cream Separators

The selling of separators now revolutionized by this great offer. You can now get the finest made and best designed machine ever built—the new National. No excuse to buy a cheap machine. You can get the new National with the Marvellous Vortepoon one-piece skimming device with no actual outlay of money.

No Cost to You

Write for particulars of this history-making offer. Get full particulars of the marvelous Vortepoon. This no-cost offer is strictly limited. Write quick and get it in your hands. You can do it by sending your name and address now. Ask for our no-cost-to-you offer. Write today—now.

National Dairy Machine Co., Dept. 3397, Goshen, Ind.

THE BOKOP HARROW

THIS IS THE TOOTH THAT DOES THE BUSINESS
It actually cuts. Makes a finer cut than any other Harrow, and Pull the Wide, Upper Face gives Cultivator Action. For Slanting Cut, Way hitch to the other end.

PULVERIZES PERFECTLY
The kind of Harrow you have always wanted. SELF-ADJUSTING—NO LEVERS—ALL STEEL. Simple—Strong—Everlasting. Can't get out of order. WRITE NOW for further particulars of this Time and Money Saving Harrow. If no Bokop Harrows now in your township we have a special proposition FOR YOU.

The Welding Co., Box P, Defiance, O.

Sell the Calf's Milk.
The milk for one calf will pay for raising three calves on **Ryde's Cream Calf Meal**. Made with care of baby foods. Safe for baby calves. Contains all ingredients necessary for rapid symmetrical growth. Cooked by special process to insure easy digestion. Insist on Ryde's. Sold by all live dealers. Send for free Booklet, "Milkless Calves." **RYDE & CO., 2556 Fillmore St., Chicago, Ill.**

Siberian Oats for sale. Best Yields past ten years. Ohio Experiment Station. 55 cents per bushel. Ten bushels 50 cents. The E. W. Armstrong Co., Monroeville, O.

elapse between the outbreaks there is a consequent opportunity for nearly all sections to share in the profits. However, there are some places that have experienced only the losses while others have never had an outbreak of either disease.

Everyone is naturally interested in discussing the profits that may be realized from the production of any fruit as the desire for gain seems to largely determine our vocation in life. Seeing the success of other peach growers has caused many an individual to enter the business then admit later that he would have had a much better bank account if he had never planted a peach tree. It is a safe assertion to say that the majority of the peach trees that are planted fail to return enough money to cover the expense that should be charged to their account. The same rule would undoubtedly apply to the mining business, yet many mines have proved to be winners, as well as many peach orchards.

Peach Profits.

Profits in peach growing are very easily computed upon paper. For instance, inasmuch as many bearing trees have been known to produce from six to ten bushels per tree, it seems perfectly fair to say that an orchard would average three bushels per tree, and, as the trees are generally planted 20 feet apart, we have 108 trees per acre, bearing 324 bushels of fruit. The consumer continues with these figures and applying the price per bushel that he is required to pay, which may vary from \$2 to \$3, he can immediately see the gold dangling upon every peach tree. However, when actual conditions are studied, the computer may have difficulty in finding a grower that has ever received such returns. The orchards seem to be very exceptional that will average three bushels per tree and as to price, most growers would jump for a contract that would agree to take all the marketable peaches they could produce during a period of years at \$1 per bushel. In fact, during the past year, with a shortage reported from all peach growing sections and consequent high prices to the consumer, many growers have disposed of their crops for much less than \$1 per bushel. According to Special Bulletin 63 of the Michigan Experiment Station, it is possible to produce peaches at a total cost of about 40 cents per bushel, thus at the \$1 price the grower is very likely to realize much more clear profit than he could obtain from the production of any other crop.

Another point to be considered in computing profits is the length of the period of usefulness of an orchard. It is possible to find peach trees from 20 to 30 years old that are still active and profitable but they are very rare. In fact, the average life of the modern orchard seems to be about 12 years, but it is much shorter than this in localities where disease is very prevalent. But referring to the bulletin again, we find that the returns from the first crop borne by the orchard under discussion were much more than sufficient to cover all the previous expenses incurred by the trees. Thus, if an individual finds it necessary to pull the trees after producing one good crop, for which he has received an average price, he will undoubtedly be ahead in the transaction.

There are many other items of importance to be considered in profitable peach production, but it is not prudent to discuss them in this article. It has been the intention to show a portion of the dark side of peach production along with the brighter aspects of the business. To the individual with ambition, who will combine the proper conditions with his own ability, peach growing offers many inducements. But it is not the place for the sluggard.

The 17th of 52 special articles to be published in consecutive issues.—Eds.

The Winter Manure Problem

DURING the winter of 1911, manure was spread on one of the clover fields at the Agricultural College. The field was tilled, and in January, before any manure had been hauled out, samples of the drainage water were collected at a silt basin into which the tile emptied, the flow of water at that time being caused by a thaw.

By going to this same silt basin a little later, in February, after manure had been spread on the snow and a thaw had followed, another sample of the drainage water was collected. These two samples were analyzed by the senior students in soil fertility, under the direction of Mr. C. H. Spurway, with the following determination of nitrogen as a result; before manuring, 8.7 parts of nitrates per million parts of drainage water, with but a trace of nitrites; after manuring, 13.7 parts of nitrate and 0.9 parts of nitrite per million parts of drainage.

This increase of nitrates in the drainage water caused by melting snows in a manured field indicates a loss of fertility. The question then arises, how shall manure be handled to get the best results in the winter time?

Advantages which Offset Losses.

There are several factors, besides that of holding all the nitrates intact, to be considered. While there is a definite loss of plant food in the case cited, yet there are certain gains to offset this loss. For instance, a better seasonal distribution of labor is obtained by spreading the manure in winter, for in the spring the rush of other work would make it difficult to get the manure in place.

Then, too, the manure on a clover field, or any wintering crop for that matter, will act as a preventive against heaving and consequent winter-killing. This is well shown in the case of lawns or strawberry patches which are mulched over winter; the grass or strawberry plants come through an open winter safely, while unmulched lawns or beds suffer.

Loss of Manure in Storage.

Were the manure not hauled as soon as made in the winter, and allowed to accumulate in the barnyard, what would happen then? Obviously, there would be some danger from leaching, though not as much as in the spread manure on a field, since the manure pile will shed considerable water. There will, however, be losses from fermentation which would not take place under field conditions. It is a well known fact that manure, in order to heat, must be in a pile large enough to exclude air from the center, so that anaerobic bacteria break down nitrates and liberate ammonia, a valuable plant food, into the air, removing oxygen for their own use at the same time.

Methods of Conservation.

There are ways, however, if the manure cannot be handled otherwise than by storing in piles over winter, of preventing loss by heating. Mr. George Lapham, of Clinton county, has a method of handling manure which gives excellent results. In his case, the horses and cows are stabled under the same roof; every morning the horse droppings are pushed, with a simple board and handle push scraper made for that purpose, over the cement floor, from behind the horses to the cement gutter behind the cows. This gutter, of course, catches all the liquid excrement from the cattle, which is readily absorbed by the horse droppings and litter. The mixture of horse droppings and cow manure is so wet that it will not heat, even though stored in piles. This method of mixing cow and horse manure is very simple and practical; in fact, it would be difficult to mix the two as completely and with as little labor by any other means, especially in winter

when cow manure freezes so rapidly.

So far as cow or hog manures are concerned, there can be no object in attempting to control fermentation or heating, as these manures do not undergo the losses by ammonification which take place in the case of horse, sheep or poultry manures.

Even Distribution Essential.

There are certain details in the application of manure in winter that suggest themselves. If the snow is deep, it will be impossible to use a manure spreader, and the farmer will probably haul the manure out on sleighs, spreading it as well as possible by hand. The chances are that the manure will in this case be applied very unevenly, since much of it will be frozen into chunks, which can not be broken up very readily with a fork in the hands of a workman who is anxious to get back where it is warm.

It goes without saying that manure spread in uneven forkfuls gives unsatisfactory results as compared to that distributed as a uniform dressing. However, it would seem that the farmer who has no manure spreader could gain on his labor by hauling the manure onto the snow in the winter, and then dragging over the manured field to break up and distribute the chunks in the spring.

Those who have proper storage facilities for keeping the manure under cover over winter will, of course, do so, rather than apply it where it will be exposed to leaching in the field, unless it be that the manure is valued as a mulch for strawberries or wheat or clover to prevent heaving. Concrete manure sheds are coming more generally into use each year, and their need is felt as much in the winter as at any other time of the year.

Benzie Co. E. H. BROWN.

KING VENTILATING SYSTEM.

Some time ago you gave in The Farmer, a description of the King system of ventilation for barns. I put the paper away but now that I want it, I can't find it, so if it is not asking too much will you please give it again in The Farmer?

Kalamazoo Co. J. E.

The adequate ventilation of barns is so important that an occasional repetition of the essential principles of the King system should be profitable to Michigan Farmer readers. These principles involve one or more ventilating shafts or flues to remove the foul air from the stable, which should extend from near the stable floor up through the roof of the barn. Assuming that such outtake flue has a height of 30 feet, the area of cross-section required would, according to Prof. King's figures, be 30 square inches per head for horses and cattle. An additional height of 10 feet would reduce the required area by about six square inches per head, or if 10 feet shorter the area should be increased by a like amount. The intake flues for furnishing air should open on the outside of the stable at a point several feet lower than the opening on the inside, and the air should be admitted at or near the ceiling of stable. The aggregate area of the cross-sections of these intake flues should equal that of the outtake flues. For example, a ventilating flue 20x30 inches in size would have a cross-section area of 600 square inches, or sufficient capacity for 20 head of horses or cattle, if 30 feet in height. Twelve intake flues 5x10 inches in size would have an equal cross-section area, and would be sufficient to admit fresh air to the stable. In modern construction these are often made in the window casings, but can be made in the wall or placed outside as desired.

The reason for having a number of intake flues located around the outside of the stable is to secure a better distribution of the fresh air without producing draught.

Early Clover Seeding.

THE amount of clover seed to use per acre and the time to sow are debatable questions. In regard to the first question, it may be said that it pays to seed freely, let the seed cost what it may. High-priced seed has been the direct cause of some poor stands or complete failures because not enough seed has been used to insure a good stand under very favorable conditions. Even though germination be perfect, many of the young plants are never permitted to reach maturity, and when the plants are few in number in the beginning any large loss means a poor stand. With high-priced land, not many bald spots can be tolerated in the clover fields if a first-class stand can be obtained at any reasonable cost. Some authorities advise the sowing of six quarts of seed per acre, but this is a waste if the seed is of good quality. Four quarts are entirely sufficient if the seed bed is in the proper condition and the seeding is done properly. However, this is largely a matter of using good judgment; one should go to some extent by past experiences as to the amount to sow. Oftentimes six pounds of seed per acre will give as good a stand as twice the amount, yet conditions are usually such as to make thicker seeding advisable, particularly on the thin places in the field. It may pay to use as much as twelve pounds per acre on these spots.

Good judgment must also be used as to the time of seeding. Some like to sow real early, say in February or early in March, while others favor late seeding. Observations tend to prove, however, that a happy medium between the very early and the very late seeding gives the best results one year with another. Late seedings often fail because of dry weather, while if the seed is sown early and a nice warm day comes, many of the seeds will sprout and the young plants are then very easily killed by severe weather conditions which follow the warm period. In any event, it hardly pays to expose the seed to the extremes of weather which usually occur during late February. From the first to the fifteenth of March the soil is usually supplied with sufficient moisture and the ground is in the right condition for the seed to work downward to the proper depth to take root, while the action of the frost and early spring rains will supply additional covering. Any morning during this period when the sun is coming out warm and clear so that thawing will soon take place is an ideal time to sow. The seed will run into the little cells, then the thawing will melt and run the surface of the ground together, so that by noon the seed will be covered nicely. Then when they sprout they will not be exposed to any freeze that comes; they will also be prevented from washing if a dashing rain follows soon after sowing. Some few people do not object to seeding on snow, but it is generally conceded that this is a bad practice since in cold weather many of the seeds will be consumed by birds, and if the snow goes off with a rain the seed will be washed into bunches in the low places, if not off the field entirely in the case of hillside land. Better results are obtained by sowing on the bare ground at a time when freezing takes place each night followed by thawing the next morning.

The seeding should be done on still days so the seed won't blow in streaks or bunches. Oftentimes it is necessary to get out early in the morning before the wind raises and work until the wind becomes so strong as to make even seeding uncertain.

The old method of sowing by hand is not to be compared with the even distribution of seed we get with the

good seeder, such as is operated with a crank or a bow. The average machine sows clover seed 36 feet to each round, and if one is reasonably careful in setting the guide stakes at the ends of the field there will be no thick and thin streaks when the clover grows up. A wheelbarrow seeder can be used on windy days as well as on calm days. In sowing a mixture of timothy and clover seed, or rather when sowing both kinds of seed on the same ground, it is advisable to sow one kind at a time because when mixed they will not scatter evenly, owing to the inequality in weight. It is never advisable to mix grass seeds with grain when the latter is being sown with a drill because the grass seeds will be put in the ground so deeply that a large per cent will never germinate.

Some have adopted the plan of increasing slightly the quantity of seed usually sown and then dividing it into two equal parts. One part is sown some time during the period between the last of February and the last of March, and in about a month the first seeding is crossed with the remainder of the seed. Some good stands have resulted from this method of seeding as it gives two chances for the clover to catch. One seeding may develop all right, while the other will be a total failure, or perchance both sowings will come on all right. But if only one should catch there will be a fairly good stand, provided good seed is used.

Indiana.

W. F. PURDUE.

EXPERIENCE WITH SOY BEANS ON THIN LAND.

I see in the last publication of your paper inquiries regarding forage crops and your advice to a man on a poor sandy farm was to sow oats and peas. The advice is good on good land but poor on poor land. I have tried it and know that oats and peas want good land to make profitable growth.

I wish to relate my experience with soy beans as a fodder crop. I have a knoll on my farm of about an acre that is very light, poor sandy soil, so poor, in fact, that I have not worked it for years as everything sown or planted dried out. Last year, being short of hay, I plowed early, worked well to insure a good seed bed and sowed one and a quarter bushels of Black Beauty soy beans broadcast, covered lightly, rolled down and watched them grow. As the hot dry days of July and August came the beans made a tremendous growth and as the lower leaves turned yellow, I cut with mower, allowed them to lay in swath over night and cocked up, let them stay for four or five days and drew four immense loads to the barn, of as fine a fodder as I ever had.

All stock like them very much and they are particularly valuable for milch cows but do not feed too many, as they are laxative. Be sure they are well cured, as they heat easily in mow. They should be handled same as alfalfa and I consider them as good a feed.

Seed may be obtained of any seedsmen and costs about \$3 per bushel. Sow about the middle of June, and if pleased with them sow the same piece year after year, for the longer raised on one piece of ground the better they yield. They will fill the ground with an immense amount of humus and as they are a nitrogen gatherer your land will soon raise anything.

Brother farmers with poor, sandy land, try a few, but don't try to ripen the seed in Michigan for our seasons are too short. Soy beans are a southern plant that wants hot, dry weather.

Ingham Co.

D. A. JESSOP.

Wheat

WITH WHEAT and other food crops going up, usual methods won't do. You want big crops to sell THIS YEAR. You have a rich soil containing enough fertility for years of cropping, but your crops can't get enough of it in their 90-day feeding period to produce their utmost. They need quick acting, soluble plant food THIS YEAR, and this year IT WILL PAY. On 151 farms, 5-acre plats on each,—James J. Hill used \$5 worth per acre of this kind of plant food, and practically doubled the crop of wheat, barley and oats with ordinary cultivation.

You can do it with A.A.C. Fertilizers

You can plant later, harvest earlier and get better crops of grains that will grade higher—no soft grain. But "seeing is believing". Why not

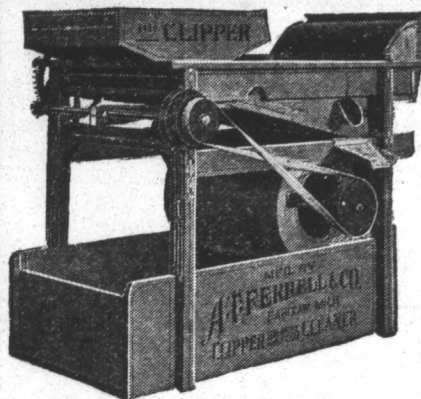
TRY-A-BAG at least this year. Try more if you have more confidence. \$2 to \$4 an acre will show you just what the available kind of plant food will do for your crops.

"The Problem of Fertility in the Middle West" and "Plant Food" are two books every western farmer should have, for they concern his interests. We send them free. No advertising in them. Get our agency proposition and carload inducement. It will pay you and help your farm.



The American Agricultural Chemical Co.
Cleveland, Cincinnati, Detroit, Buffalo, Baltimore, New York

The Clipper Improved No. 1-B Grain and Seed Cleaner



This Mill has a principle that is different from all others. For years it has been thoroughly tried out and adopted by thousands of the best farmers, the U. S. Dept. of Agriculture, Agricultural Colleges, Experimental Farms and hundreds of the leading seedsmen, seed corn growers, etc.

Ours is the only mill making use of the "vertical blast" which actually weighs every seed and kernel, separating the light, shrunken, immature seeds from the plump, heavy mature seed, 98% of which will germinate under test. This point alone makes much of the difference between crop success and failure.

No Mill Will Do Good Work Without the Right Kind of Screens.

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

The No. 1-B is sold under a **30-Day Guarantee of Satisfaction** or money refunded. Price, complete, east of the Mississippi, \$23.50 cash, FREIGHT PREPAID to your R. R. station.

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

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

The Huber Engine makes steam at saving of 25 to 40 per cent. The Huber Farmer Tractor develops the greatest power with the least fuel. Read it all in the new book. Address
THE HUBER MFG. CO. 666 Center Street, Marion, Ohio

THRESHING

More Better Cheaper

We have told thousands of farmers how to do it. Let us tell you. Our new book explains how the

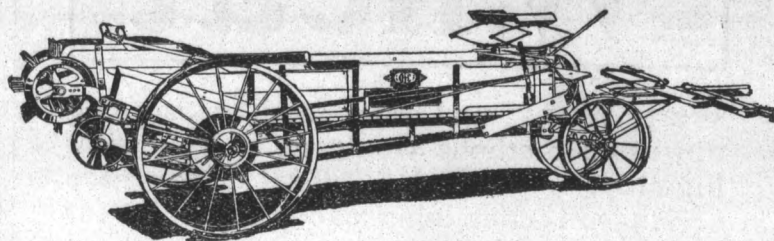
HUBER

Thresher Equipment

makes and saves money. Describes fully the thresher that cuts the bands; feeds, weighs, sacks the grain; and stacks the straw; all automatically. Send postal today.

Mention the Michigan Farmer when writing to advertisers.

International Harvester Manure Spreaders



YOU are interested in the results you get from a spreader, rather than in the features. Still, the only safe way to be sure of getting results is to know for yourself the purpose of every feature on the machine. I H C manure spreaders have all the important, necessary spreader features, therefore when you know I H C spreaders, you know them all. In a spreader you want a machine that will break up manure into small particles and spread it evenly and that, finally, will last long enough to pay for itself. You don't need a spreader to haul manure in, your wagon will do that.

Spreading manure is heavy work. To begin with, manure itself is heavy. It takes both power and strength to tear it up and scatter it. Power and strength require strong wheels and trucks, a stiff frame, heavy bearings. Your spreader then, had better be a little too heavy than a little too light. That little extra weight makes it stiff and strong, keeps the bearings in line, prevents warping and jamming of the apron, cuts out all necessary friction and wear, adds nothing to the draft of a loaded spreader, but adds years to the efficient life of the machine.

Don't wait until you are ready to buy, but begin now to study I H C spreaders. See the machines at the place of business of the I H C local dealer who handles them. Write to us for information that will help you to get the biggest value for your spreader money.

International Harvester Company of America

(Incorporated)

CHICAGO

USA

Champion Deering McCormick Milwaukee Osborne Plano



BUCKEYE
"A wise buy"

Cultivators

Buckeye Cultivators are made in all different styles—Riding and Walking. The famous Buckeye Dodger Pivot Axle Riding Cultivator, the Buckeye "Easy" Riding Balanced Frame, the Buckeye Tongueless, the Buckeye Narrow Row, and many other kinds, are illustrated in the Buckeye Cultivator Catalogue. Send for a copy and get posted on the Buckeye Line.

Every Cultivator Guaranteed to be and do all we claim After you are posted on the Buckeye, go to your local dealer and see the Cultivator that is suited to your particular work. The Buckeye is a wise buy.

Buckeye Cultivators have the materials in them that insure years of satisfactory work and hard service.

Buckeye Cultivators do their work right without killing man or team.

A Buckeye Catalogue is yours for the asking.

THE AMERICAN SEEDING-MACHINE CO., Inc.
Springfield, Ohio



FARM NOTES.

Muck and Marl for Sandy Land.

Would an application of marsh muck be of any benefit to sandy soil, if hauled direct from the marsh to the sandy soil? Would the marl under the muck be of any benefit if applied to the same kind of soil, or is there any other use that marl can be put to on a farm?

Washtenaw Co. SUBSCRIBER.

Several Michigan Farmer readers have given their experiences in the application of muck to sandy land. In practically every case it has been maintained that where the hauling could be done in the winter season so that the men and teams could be kept employed at a time when they could not be used in productive work, it is profitable to apply muck to sandy land.

As to the application of marl, there is no doubt at all that it will pay big dividends to apply marl to some of the sandy land in Michigan. Experiences in trying to grow alfalfa, as well as the frequent failure of clover on this kind of land indicate that most of Michigan's open soils which have been farmed for a considerable term of years have become acid in character and are greatly improved by the application of lime in any form; and where marl is available on the farm, there is no cheaper form of lime to use.

The Local Value of a Bed of Marl.

While dredging through my farm we discovered that I had about ten acres of marl bed. The dredge man estimated that it would run about 60 feet in depth. What would good marl be worth a load of a yard and a quarter, the farmers to come and get it? Montcalm Co. E. W. J.

Marl in a water-free state has equal value with the best ground limestone as a soil amendment. Finely ground limestone costs in the neighborhood of \$1.25 per ton at the quarry, plus the freight to the point of consumption. It is, however, in a much better condition to apply than water-soaked marl. There is no question, however, that marl has considerable value for local use for farmers within hauling distance, especially where it can be secured and applied during the winter season. To fix a cash value would be difficult, as a great deal would depend upon local conditions. From the figures given a fair basis could be arrived at. A small net price, however, would compensate the owner, and the opportunity of securing a supply of marl near at hand should be greatly appreciated by the farmers of any community.

Crops for Green Manure.

I have a 30-acre field that had been pretty well run before I got it. Raised a poor crop of corn the past season and clover failed before that. Will not try to take another crop from it until it is in better condition. Had thought of sowing thickly to oats and turning them under in time to sow buckwheat, also to be turned under. After that to lime it well and try clover alone again, in the spring. Can you suggest any better way of handling it? How would cowpeas do? Not very low land, some parts are very sandy. Why turn a crop under green? Would we not get more humus and less acid by letting any crop almost mature, then cut and turn under? What can we put in this spring to make late cow pasture? What can be seeded in muck pasture that cannot be plowed?

Van Buren Co. W. H. W.

The plan suggested for adding vegetable matter to this soil might be improved upon, in the writer's opinion. The oat crop would not make a very heavy supply of vegetable matter to plow down. Oats and peas would do better if this soil is in a condition to grow peas, but if in an acid condition it probably would not produce an abundant crop. Cowpeas would promise better results, and have been grown with a good deal of success on much of the lighter land of southern and southwestern Michigan. After the crop selected for spring sowing is plowed down during the late summer or early fall, then rye and vetch should be sown, which could again be plowed down in the spring and a

spring crop grown on the land before it is sowed to clover, since both the cowpeas and vetch are legumes and would accomplish much the same result in the addition of nitrogen to the soil as would a seeding of clover.

The best time to apply lime, if this soil is acid, and it probably is, is when fitting it for the first cover crop next spring, since the legumes sown will be benefited by this application. It would also pay to use some phosphoric acid and potash fertilizer in order to grow a maximum of vegetable matter to be plowed down for the improvement of the soil. The only object in turning a crop under while green, instead of permitting it to mature is that decomposition will take place more rapidly and some time will be saved by this method.

There is no very satisfactory substitute crop which can be sown in the spring for late cow pasture. It is a better plan to plant corn for this purpose and use same as a soiling crop, as a great deal more feed can be produced from a given area in this way.

For supplementary seeding on muck land pasture, red-top will prove as good as any grass which can be sown.

Breaking up a Hardpan.

I have a farm of 80 acres, part of which is clay and the rest a mixture of brown and grayish sand. This layer of sand is nine inches deep. Just below this layer of sand is a layer of hardpan, varying in thickness from three to six inches. This hardpan is underlaid with a clay subsoil. What kind of a plow or tool would a person use to break up the hardpan in the bottom of the furrow? Would like to hear through the columns of this paper from someone who has had some experience in this line. Ottawa Co. SUBSCRIBER.

Where a thin hardpan is present just at the bottom of the furrow slice, an ordinary subsoil plow should prove serviceable in loosening it up and penetrating it in places so as to facilitate drainage. This land, however, will need to be thoroughly tile drained in order to secure profitable results. The use of dynamite to break up hardpan soils is a modern development of scientific agriculture, but it is questionable whether its use would be profitable or necessary where only a thin hardpan exists.

If any reader has had experience in the improvement of soil of just this type, we should be glad to have them contribute that experience to these columns for the benefit of this enquirer and others who are confronted with a similar problem.

Seeding Alfalfa in Grain.

Will you inform me if I can, and how to seed a field of fall wheat to alfalfa this spring; how much to sow, when to sow, and should the ground be spike-toothed before or after I sow the seed, or not at all? Should I sow and June clover with it? There has never been any alfalfa on it before. Tuscola Co. W. S. B.

There is no doubt in the writer's mind that when our fields have become accustomed to growing alfalfa we will be able to seed it in grain as other clover is now seeded, and with equal success. Where it has not been grown and there is no definite knowledge of the presence of the bacteria peculiar to this plant or that the soil is in a suitable condition to make an acceptable home for same, it would be better to mix the alfalfa with clover seed and sow as you would on this land to secure a clover seeding. In this way you will demonstrate whether the land is in condition to promote a successful stand of alfalfa, in which event the alfalfa will not be damaged by the presence of the clover, but will gradually supplant it as the alfalfa plants develop.

THE DETROIT TRIBUNE DISCONTINUED.

We can accept no more subscriptions to the Detroit Daily Tribune. All the crop selected for spring sowing is plowed down during the late summer or early fall, then rye and vetch should be sown, which could again be plowed down in the spring and a

WIND MILLS

No More Oiling

Perkins Oilless Double Geared Steel Wind Mills
Five-Year Warrant of Oilless Bearings



Established
1860

Perkins Wind Mill Company has successfully Exported Double Geared, Steel, Oilless, Self-Governing Wind Mills—and having tested their efficiency under most severe conditions, are now furnishing them to the Domestic Trade. These are the only truly Oilless Wind Mills made, and they have neither oilholes nor grease cups on them.

Our Specially Prepared Phosphor Bronze Bearings are guaranteed to wear without oil for Five Years. Don't buy a cheap mill which you must oil every week. Our mill you never oil. Simple, strong and durable. Guarantee good the world over. Catalogs free.

Our Gasoline Engines save you 20 per cent in fuel.

Try our light-running Feed Grinders.

PERKINS WIND MILL CO., 250 Main St., Mishawaka, Ind.

OPERATING A ONE-MAN FARM.

In a recent issue subscriber desires to know whether it is possible for one man to operate a farm and do his work as it should be done, without making an almost intolerable slavery out of it. In the first place, it depends some on the size of the farm, in comparison with the size of the farmer. Then it depends also, as to what his aim is: to farm for pleasure as well as profit, or merely to hoard up. A man who has the ambition to make a lot of money in a short time is usually out of place on the farm, as farming is not well suited for that purpose, and, by the way, the sole aim of hoarding up money is a poor purpose to live for. But if the object is to be contented with a comfortable living, one man can operate a farm without making a slave of himself.

In my judgment, two men can operate three 40's easier than three men can, single-handed, operate one 40 each. But the writer has operated a 40-acre farm at middle age and worked only eight-hour days in the field and did his work well. Neither were the chores excessive. I raised wheat, oats, barley, corn and chickory, and some potatoes, kept two horses, two cows and some chickens, and found that I could raise a colt or two, and also some young stock. I considered my situation far more desirable than that of the average city dweller. And I had lived about ten years in the cities and know whereof I speak. I could make a little more than a mere living. But, of course, if we figure on a big mortgage it is a different proposition. Gladwin Co. L. V. SOLDAN.

MORE ABOUT BEANS.

With beans soaring above the \$3.00 mark there is a general awakening of interest in the seed for next year's crop. Some very convincing evidence as to the merits of clean seed was forthcoming in the yields this year. On the other hand, some serious disappointments resulted from seed, supposed to be good and bought for such, which was defective and diseased.

It is interesting to know that the first and second awards on beans at the seed improvement exhibit at the College recently grew in areas more or less affected with disease. A sample of the beans before picking, which was awarded the second prize, showed but a trace of anthracnose. In fact, one had to hunt for a long time if he was able to find the trace of iron rust color so significant of anthracnose.

The history of the second award is of interest because more fully described by the grower, I. N. Cowdrey, of Gratiot county, who points the way for others to secure good seed. The plan is the seed bean patch similar to that of the seed corn plot. Enough of selected seed of the cleanest stalks of beans in 1913 was saved and hand-threshed as well as hand-picked. This seed approximated enough for an acre, and it was the genesis of the clean seed shown at the College, grown in 1914.

It is probably more economical to inspect the seed plot while the crop is standing than to pick out diseased beans later. As a matter of fact, the diseased and weak plants can best be eliminated at that time and also the sports or beans that ripen unevenly. Then it is not a serious job to thresh out this seed plot with the discarded and obsolete flail, for the threshing machine is a carrier of disease.

In a rather superficial map, made of the good crops of beans this season, both from actual yields and freedom from disease, there seems to be a general concurrence in "grown on clover sod," or a new or comparatively new soils. It does not require much guessing to have the theory naturally presented of beans, being a legume, like others of its family, protesting against acid soils and asking for lime. Does

the bean crop follow the clover crop so successfully because of the accumulated nitrogen of the clover or because there was lime for the clover and also for the beans? Fertilizer experiments in this regard of synthetically supplying the nitrogen are by no means conclusive, although considerably indicative. Beans refuse to grow anything much but vines on muck soils where the mineral elements are lacking.

The supernormal yields of beans have been where there has been good to large vine growth with corresponding long pods. In Genesee county there are reports of damage done by worms destroying considerably sized areas in a field, with a preference for sandy spots. These worms are said to be about the size of onion maggots and work on the bean roots.

There is no abatement in the interest and desire to organize a Michigan Bean Growers' Association. The high price of beans and bean seed will demand a compensatory price next year. Shiawassee Co. J. N. McBRIDE.

GOOD ROADS CONFERENCE AT LANSING.

A conference was held at Lansing, February 10, attended by Senate and House committees on roads and bridges, state highway department officials and road commissioners of Branch, Calhoun, Cass, Clinton, Dickinson, Eaton, Genesee, Iron, Kalamazoo, Jackson, Kent, Luce, Muskegon, Oakland, Ottawa, St. Clair, and Shiawassee counties. A state organization was formed, with Alvah W. Brown, of Grand Rapids, as president, and W. W. Cox, of Kalamazoo, as secretary. Resolutions were adopted favoring the use of county jail prisoners on highways, fall election of county road commissioners to take office the following January, and an amendment to the constitution permitting the state to bond for highway purposes. The intent of the amendment is to make it possible for the state to take advantage of any federal money which might be allowed by the present or a future congress.

Recommendations to the present Legislature included the following: A state reward on a minimum width of concrete or brick road of eight feet instead of nine; a comprehensive wide tire law; standardization of the width gauge of all vehicles, including sleighs and cutters; payment of state reward on shoulders of roads when built of different material from the road itself; that state reward money be used in construction and maintenance of roads by the county commissioners as they think best.

The association opposed the Culver bill, which provides for the return of state road moneys to the counties in proportion to the assessed valuation, and also opposes the vehicle light bill as introduced by Representative Oakley. Support is given to the automobile tax law as proposed by Representative Smith. State-wide annual conventions of good roads officials are favored, with commissioners allowed their per diem and expenses for actual time and expenses incurred.

Kent Co. ALMOND GRIFFEN.

A PROTEST AGAINST CRITICISM.

I noticed an article in last week's issue from C. C. Miller, of Ingham county, taking farmers to task for not having their corn all husked this last fall before cold weather came on. I think that Mr. Miller is rather uncharitable, having evidently not taken into consideration that help was hard to get at any price, and corn husking machines were rushed to their limit, there not being enough of them to supply the demand.

I imagine that Mr. M. never spent a season on the farm in all his life, but is one of these "paper farmers" that are numerous at times, and can give us old farmers more instruction (?) in an hour than we ever knew before. Unless we protest against such methods we had better move out. Let us hear from others. Allegan Co. F. H. CARPENTER.

President Wants War on Stumps Now

"There is a shortage of food in the world now and that shortage will be more serious a few months from now than it is now."

"It is necessary that we should plant a great deal more; it is necessary that our land should yield more per acre than it does now; it is necessary that there should not be a plow or a spade idle in the country if the world is to be fed."

PRESIDENT WILSON

Before Chamber of Commerce of the United States February 3rd.

Every day's progress of the war in Europe and Asia emphasizes the dominating position of America as the world's food producer.

There is going to be a tremendous decline in food production in Europe in 1915, because of the millions of men and thousands of square miles of territory engaged in military operations.

It is not only our duty to push our farms to their highest producing possibilities, but it will be greatly to our profit.

We must not only get the maximum production out of every acre of cultivated land, but we must as far as possible put under cultivation thousands and thousands of acres of cut-over timber and swamp land.

The ground occupied by one good sized stump or boulder can produce enough food to feed one person one week.

Don't wait until next spring or summer To Get Rid of the Stumps. By using low freezing explosives you can clear that land before the snow leaves the ground. You can blast ditches before the ground is dry enough to cultivate.



Red Cross Extra 40%

IS

Low Freezing

Order through any hardware dealer. Ask him to telegraph. Full instructions free in our Farmer's Handbook No. 100-F.

DU PONT POWDER CO., Wilmington, Del.

ESTABLISHED 1802.

Duluth Office: Fidelity Building.

Wisconsin Wins In Big Hatching Contests Every Year

Why Pay More!
For only \$10 you can get these two prize-winners complete, ready to run—guaranteed 10 years—on 30 days' trial—money back if not satisfied, delivered, freight paid (East of Rockies) from a firm which has been building incubators and brooders for 12 years. Think of it. These two fine machines—



130-Egg Incubator



130-Egg Chick Brooder

Both \$10
FREIGHT PAID EAST OF ROCKIES

Wisconsins have hot water heat, double walls, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Made of finest, select, clear CALIFORNIA REDWOOD, not pine, paper or other flimsy material. Incubator finished complete with thermometers, egg tester, lamps, everything but the oil. This is the best outfit you can buy. If you don't find it satisfactory after 30 days trial, send it back. Don't buy until you get our New 1915 catalog, fully describing this prize-winning outfit, also shows larger machines. WRITE FOR IT TODAY. You can't make a mistake in buying a Wisconsin.

WISCONSIN INCUBATOR COMPANY, Box 112 Racine, Wis.

BEE HIVES, SECTIONS, BERRY BASKETS AND
Comb Foundations, Smokers, etc.
Send for catalog A. Thoroughbred Italian bees and queens. Ask for catalog B.
M. H. HUNT & SON, Box 525, LANSING, MICH.

Tells why chicks die

E. J. Reefer, the poultry expert of 543 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

Fence 13¢
MAIL THIS COUPON NOW

I understand that you have made a record-breaking contract for many carloads of best steel fencing. Therefore, send me your new catalog free (with prices starting at 11¢, instead of 13¢ per rod.)

Name _____
Address _____

THE MAIL-ORDER HOUSE OF THE EAST
Manufacturers Outlet Co.
Dept. 82-P, Buffalo, N. Y.

WE PAY THE FREIGHT
Brown Fence

Strongest, most durable made. Basic open hearth wire. DOUBLE GALVANIZED. Compare our quality and prices with others.

Bargain Prices—Direct From Factory
150 Styles—13 Cents Per Rod Up

BOOK FREE
WRITE NOW

THE BROWN FENCE & WIRE CO.
Dept. 49 CLEVELAND, OHIO

FARM FENCE

41 INCHES HIGH FOR STAYS only 6 inches apart. Wires can not slip. 100 styles of Farm, Poultry and Lawn Fencing direct from factory at money saving prices. Ideal Galv. BARBED WIRE \$1.45 80-rod spool. Catalog free.

21 CENTS A ROD

KITSLMAN BROS. Box 278 Muncie, Ind.

DON'T BUY until you get our factory guaranteed heavy galvanized, open hearth fence, 14¢ per rod. 41-inch farm fence 21¢ per rod. 48-inch poultry fence 22½¢ per rod. NOTE: All wires are galvanized before woven. Write for free catalog.

THE TIGER FENCE COMPANY,
Box 85, Waukesha, Wis.

WHITE CEDAR FENCE POSTS—Michigan Cedar Fence Posts, 7 ft., 8 ft., and 10 ft., lengths. Special attention given to farmer club orders. Write for prices and terms. F. G. COWLEY, Oscoda, Mich.

Michigan White Cedar FENCE POSTS
GEORGE M. CHANDLER, Onaway, Mich.

I PROVE THAT MY "Can't-Sag" Gates

Cost You Less than Home-Made, All Wood Gates—Costs Only HALF as Much as Iron, Gas Pipe or Wire Gates

I want to ship you as many "CAN'T-SAG" Gates as you need and let you use them 30 days on your farm. I want to prove to you they are better, cheaper than any other gate made—cheaper than all wood gates you make yourself. I want you to put up my "CAN'T-SAG" Gates—use them thirty days and if they don't prove all I claim, I'll take them back—pay the freight both ways and you won't be out one penny.

Freight Prepaid—Guaranteed 5 Years—30 Days Trial
Send for my New Gate Book—get my Freight Prepaid offer—pick out the sizes you want and I'll ship them at once. "CAN'T-SAG" Gates never sag or drag—they can't. 8 angle irons, double bolted to each board, with six triangular truss braces and all steel hinges—hold gate stiff and firm. Patent reinforced self-locking hinge makes it swing free and easy always. To make the cost still less I'll gladly send you the Gate Book—everything but the boards—so you can make your own gates and save Big Money. Most farmers prefer to buy just the Gate Book—it's cheaper. You can make your own gates in a few minutes spare time. Send for New FREE Catalog and low 1915 prices TODAY.

Alvin V. Rowe, Pres. ROWE MANUFACTURING CO., Dept. 4408 Adams Street, CALESBURG, ILL.

Care of Young Turkeys.

ON many farms turkey raising is a reliable source of income. There is a great difference in the success of farmers, owing to the difference in the skill in managing the young birds. The first step in raising turkeys successfully is to have them well born. The breeding stock should be carefully selected, whether it is young or old. We prefer an adult cock, from 23 to 25 pounds, and such a bird may be kept three or four years without change.

The male bird of whatever variety, should be as perfect as possible in plumage, shape and weight. If a strong, healthy bird, and well bred, he will leave his mark upon every one of his offspring, however large the flock. As a single act fertilizes a whole clutch of eggs, one gobbler is sufficient for 18 to 20 hens, and that is as many as is desirable to keep on any farm, however large.

Yearlings Best for Breeding.

In selecting hens we prefer yearlings to pullets, and if satisfactory in every respect they may be kept four or five years. They lay larger eggs and bring stronger poults. The hens should be put with the gobbler as soon after February 1 as possible. They will not begin to lay before the last of March.

They should have nests prepared for them near the house or barn, in an old barrel or box, that can be closed at night, so as to protect the hen while sitting upon her eggs. If the nest is covered with brush or old boards, so as to be screened from observation, they will be more likely to resort to it. They will require some watching as the laying season approaches, to prevent them straying out into the woods. It is a matter of great importance that they should lay near the house, where they can be protected while sitting.

The Care of the Eggs.

The eggs should be carried into the

house as fast as laid, be placed in a large flat dish, in which a piece of flannel has been spread. They should be turned bottom side up every day, and kept covered with the flannel to prevent them from chilling.

When the brooding season comes on, place from 15 to 17 eggs under each hen. Cover the mouth of the box or barrel every night, and keep food near the nest, or watch for the bird every day as she comes off, to see that she is well fed. The eggs, if well cared for, hatch with more uniformity than those of any other domestic fowl. Let the hen take her own time after hatching, to leave her nest with her young ones. When the mother bird is ready to take the field, put the young poults in a triangular pen, made of boards about 12 feet long and one foot wide, set up edgewise. This pen will restrain the young ones for ten days or more, and when they can fly over the boards, it will be safe to give them more liberty.

The First Feeding.

Feed at first with hard boiled eggs or with beef, chopped fine. Also give them coarse ground meal scalded, and mixed with milk, as much as they will eat up clean. This food is the best for them until they are a month or six weeks old. If well fed every morning, as soon as they come off the roost, they will not wander much in the wet grass. As the sun gets up they should be driven into the fields, if they do not go of their own accord.

After about six weeks if they be given unlimited range, they will secure nearly all of their living in the fields and woods. If fed regularly at night they will come home early to roost. They should be looked after every night upon the roost to find if any are missing. Particular attention in these small things is generally the measure of success in turkey raising.

J. T. M.

The Raising of Broilers for Profit.

Beginners often ask the question can chicks be hatched in winter and raised at a profit? The answer is, yes, by some people. One who has had little or no experience with chicks, should not attempt such a thing. It is a hard matter for beginners to raise chicks, sometimes in the summer; and they are much more difficult to handle in winter.

Getting good, fertile eggs in winter is a problem beginners have to contend with. And next comes the hatching. A good incubator is, of course, a necessity. Brooders and brood-houses must be provided. And if the latter have to be built especially for the purpose, it will be readily seen that quite a little capital will be needed. Then market facilities must be considered. Therefore, we would advise all beginners to get good and ready and begin to hatch chicks early in March. That is, get the hens to setting or the incubators going so that the chicks will begin to come out about April 1.

Winter Hatching Usually not Successful.

We have found this plan more practical than trying to hatch out chicks in the dead of winter. Winter chicks are too often weak and sickly. When we want winter chicks for broilers, to be marketed in the early spring or late in the winter, we hatch them out in the fall, during the latter part of September and on up to November 15. This gives the chicks time to get a start before cold weather sets in. Late hatched chicks seldom grow as fast as those hatched in the early part of the season, but they do much better, as a rule, than those that come off in the winter.

Some people advise us to hatch our

pullets for winter layers, in February. We never tried it and never will. Winter chicks which, of course, must be hatched and reared by artificial methods, are suitable only for market purposes, we believe. Everyone who wants to be successful with chicks, should provide good comfortable houses and not depend upon coops. This applies to all seasons. Even in summer, little chicks suffer during wet weather. It is next to impossible to keep a coop dry and quite as difficult to keep it clean. If chicks can be kept in a clean, dry, well-ventilated house, they will seldom take gapes. While, if they sit in damp filthy coops and are allowed to wander around through the rain they soon begin to droop. In dry warm weather it is easy to care for chicks in almost any sort of coop. It is the cold rains that play havoc with the poorly protected broods. Even the best of houses are none too good for use in cold or rainy weather. They must be large enough to give the chicks room for exercise. Have plenty of windows and good floors. If the siding is not as close as it should be, we would advise the use of some kind of sheathing. We use plain sheathing on the inside or tarred sheathing on the outside. If the houses are intended only for summer, it is not necessary to make them so close; but they must have good roofs that will not leak.

Protect Chicks from Storms.

Last season we learned a valuable lesson. Our chick-houses (four in number) were all occupied, having been in use since early in the spring, as we are in the habit of filling the houses with the early broods. We kept on hatching until the last of June and some of these chicks were put in

ABC
of Chicken Profits—FREE

Send Johnson your name and get the bedrock facts on making profits with chickens.

Learn how Johnson started 580,000 people the simplest and easiest way with his

Old Trusty

Big production makes low price. And Johnson pays freight East of Rockies. Orders filled the day received. Write at once for new book whether you start now or not. Address

M. M. Johnson Co.
Clay Center, Neb.

STILL LESS THAN \$10
30 to 90 Day Trial

Ironclad WINS
In 2 Biggest HATCHING CONTESTS Ever Held

140 Egg Incubator } BOTH \$10
Chick Brooder } FOR

If ordered together. 30 days Freight trial, 10-year Guarantee. Paid direct from this advertisement—money back if not satisfied. Incubator is covered with galvanized iron, triple walls, copper tank, nursery egg tester. Set up ready to run. The Brooder is roomy and well made. Send for free catalogue.

Ironclad Incubator Co.
Box 107, Racine, Wis.

My Free Book "Hatching Facts"

Tells how thousands make big hatches, make big money with Belle City hatching outfits. Tells how users won 13 more World's Championships in 1914, making

Belle City 21 Times
World's Champion

Write today for this great Free Book. Join the money-making World's Champion Poultry Raisers. Book gives you full particulars of my

\$800 Gold Offers

My 10-year personal money-back Guaranty—my low prices, freight prepaid. See World's Champion machines in actual colors. Start early for gold offers. Jim Rohan, Pres.

Belle City Incubator Co., Box 14, Racine, Wis.

Prairie State Incubators

Famous for hatching big, strong chicks that live. Built for lasting service, reliability and economy of operation. Poultry raisers find them practical to operate and profitable to own.

Prices \$9 to \$38

Made in five sizes; 60 eggs to 390 eggs. All embody the well-known Prairie State principle—top radiant heat, down-draft ventilation, and applied moisture. Catalog free.

Prairie State Incubator Co.
123 Main St., Homer City, Pa.

**GILBERT HESS**Doctor of
Veterinary ScienceDoctor of
Medicine

Why 50 out of every 100 chicks die— I can save most of this loss for you

What are you doing now to condition your poultry for the production of fertile eggs? Nothing—at least, a lot of people *don't* do anything, and then they wonder why the baby chicks keep dropping off one by one until more than half the hatch die. Then they say the poultry business doesn't pay. Start in right now to tone up and condition your hens according

to "the Hess idea" and I guarantee you'll make the poultry business a *real* business. And when the baby chicks are hatched remember that half the yearly hatch die through leg weakness, diarrhoea, gapes and indigestion; but remember, also, that most of this great loss can be surely saved by the use of

Dr. Hess Poultry PAN-A-CE-A

Not a Stimulant, but a Tonic

Costs 1c a day for 30 fowl

I have compounded this scientific preparation from the knowledge I have gained as a lifetime veterinarian and doctor of medicine. I discovered that the use of a certain nerve tonic and appetizer would overcome leg weakness; that a certain internal antiseptic could be taken up into the blood and would prevent and remedy gapes by causing the worms in the windpipe (the cause of gapes) to let go their hold and help the chick throw them off. By combining these ingredients with certain bitter tonics and laxatives I found that the little chicks' digestion could be considerably invigorated.

A Preparation of 22 years' standing

My Pan-a-ce-a will put your fowl in splendid condition for the production of fertile eggs; it will help your chicks grow rapidly—put them squarely on their feet—help them feather quickly and keep them in perfect health. All the many years that Dr. Hess Poultry Pan-a-ce-a has been on the market, it has never been sold on claims or say so, but absolutely on the results it must bring each buyer. I urge you to put my Pan-a-ce-a to the test under the broadest and most unqualified merchandizing guarantee you have ever read. Here it is:

So sure am I that Dr. Hess Poultry Pan-a-ce-a will make your poultry healthy, make hens lay, help chicks grow and shorten the moulting period, that I have authorized my dealer in your town to supply you with enough for your whole flock, and if it doesn't do as I claim, return the empty packages and get your money back.

My Pan-a-ce-a is sold only by reputable dealers whom you know. It is never peddled. 1½ lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50. Except in Canada and the far West.

Send for my free book that tells all about Dr. Hess Poultry Pan-a-ce-a.

DR. HESS & CLARK, Ashland, Ohio

Free Prescription by Dr. Hess

Name _____

Address _____

If any of your poultry or animals are sick, send full details in a letter and Dr. Hess (M. D., D. V. S.) will prescribe for them free of charge. Send 2c stamp for reply.

Dr. Hess Stock Tonic

Your stock need this tonic now to harden and condition them after the confined heavy feeding of winter. There's nothing better to put horses in trim for hard spring and summer work. Milch cows need it badly just now to prepare them for the heavy milking season ahead. Dr. Hess Stock Tonic makes all stock healthy—keeps them toned up and expels worms. Sold under money-back guarantee. 25-lb. pail \$1.60; 100-lb. sack \$5.00. Smaller packages as low as 50c, except in Canada, the far West and the South. Send 2c for my new free Stock Tonic Book.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or if kept in the dust bath the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting top cans, 1 lb. 25c; 3 lbs. 60c. Except in Canada and the far West.

Copyright 1915 by
R. J. Reynolds Tobacco Co.

Just like raising bumper crops

Every man who packs Prince Albert tobacco into his old jimmy pipe gets back 100% pleasure and satisfaction. Sort of like getting bumper crops!

Prince Albert certainly will give you more happiness than any tobacco you can smoke, because it not only has a remarkable flavor and aroma, but it is made by an exclusive patented process that cuts out the bite!

PRINCE ALBERT

the national joy smoke

will surely revolutionize your pipe-smoke notions.

And Prince Albert is just as joyous, just as sunshiny, used in any other way as in a pipe.

Invest ten cents for a tin and know for yourself how good Prince Albert really is.

Sold everywhere in tippy red bags, 5c; tidy red tins, 10c; also in pound and half-pound tin humidors and in handsome crystal-glass pound humidors with the sponge in the top that always will keep your supply of P. A. delightfully fresh.

R. J. REYNOLDS
TOBACCO CO.
Winston-Salem, N. C.



"LAWN PARK" COOP

Saves Your Chicks

The Wire Park, which pulls out like a drawer, gives hen and chicks fresh grass, air and sunshine during the day; closes at night and in storms. This coop meets every demand; portable, with removable floor for easy cleaning; roomy, light, durable, sanitary.



PROOF
Against
Hawks, Rats,
Weasels, etc.

Made of galvanized metal; repels vermin. Size, open, 18 in. x 24 in. x 48 in. Pays for itself in chicks and labor saved. Write today for free circulars, special prepaid offer and how to turn work into pleasure and profit.
CYCLONE MFG. CO., DEPT. L; URBANA, IND.

GREIDER'S Fine CATALOGUE
and calendar of pure bred poultry; 70 varieties illustrated and described, many in natural colors. Perfect guide to poultry raisers—full of facts. Low prices on stock and eggs for hatching. Incubators and brooders. 22 years in business. You need this noted book. Send 10c for it—today.
B. H. GREIDER :: Box 56, RHEIMS, PA.

SHOEMAKER'S BOOK ON POULTRY

and Almanac for 1915 has over 200 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c.
C. C. SHOEMAKER, Box 911 Freeport, Ill.

\$2.50 for 25 to 50 CHICK HOVER
Made of Galvanized Steel. Can be used in any box. Safe and durable. Hot water heat. All complete. Incubator book free. We make 73 different articles.
WENDELL INCUBATOR CO., Holly, Mich.

Additional Poultry ads. on page 273.

Light Running Silberzahn

is known everywhere for its great simplicity, strength and durability, its can't clog and safety features, its absolute supremacy among ensilage cutters. It stands the test of hardest work. Guaranteed to do more and better work on less power than any other ensilage cutter on the market. Write for catalog and proof.
GEHL BROS. MFG. CO., 1541 S. Water St., West Bend, Wis.

"THE KING OF ENSILAGE CUTTERS"

is known everywhere for its great



a vacant corn crib while others were placed in ordinary coops made of large boxes. On the evening of July 22 a heavy rain began to fall. It was very moderate, at first, but it proved, later, to be a cloud-burst. We had to go right out in the midst of the storm and rescue the chicks in the coops from drowning. We had some difficulty in saving the chicks, although they were nearly all as large as quails. They were put in dry boxes and brought into the house, where they remained all night beside the kitchen range. They all recovered, but some were badly stunted. We will never use small coops again.

We recently hit upon a novel plan for covering the poultry house, where they need something to keep out cold, or to keep the floors from getting badly soiled. Take cheap roofing or sheathing (not the tarred kind) and tack it on the floor. Over this put a quantity of clean litter, which will help to keep it clean. Any kind of heavy paper will do to use in brooders or chick houses. When soiled, we burn the paper. This is easier than cleaning the floors. A good permanent floor can be made of lumber covered with a good grade of patent roofing. We have two hen house floors covered this way. The hens cannot tear it up as easily as some other covering. Poultry will not thrive in winter with cold feet.

Ohio.

ANNA W. GALLIGHER.

EGG-EATING HENS.

I am troubled with my hens eating the eggs immediately after laying them. I have tried everything I could think of but to no avail. If you could favor me with some kind of scheme to prevent this it will be greatly appreciated.

Macomb Co.

J. W.

The way the hen usually contracts the habit of eating eggs is by accidentally breaking an egg when getting out of the nest. After getting a taste of the egg which she likes, she often thereafter breaks the shells of new-laid eggs and eats them. The taste of eggs is especially pleasing to hens which are not getting a balanced ration, and who crave something containing considerable protein. It is therefore important that one feed hens some beef or bone meal or milk to go with their regular grain ration. Keeping the hens busy by making them work for their feed will also help to counteract this habit, and the shells of eggs used in the house, which are to be fed to the hens, should be crumpled and heated in the oven before feeding. Despite all one can do, sometimes it is rather hard to break the egg-eating habit. Some are successful by filling an egg shell with red pepper or other disagreeable stuff, or by putting china eggs around for the hens to peck at and hurt their bills. Keeping the nests dark will also tend to break or prevent the habit.

If none of these methods effect a cure, it would be advisable to get rid of the hens who have the habit, or put them in a place by themselves so that they do not teach the others.

GETTING SETTING HENS DURING THE WINTER.

Referring to the article in your January 9 issue, entitled "A Hatch Every Month," will you be good enough to advise me what kind of hens one must have to achieve this "succession of crops," as you call it? Is there a strain of hens that will set during the cold weather? Am asking for this information for the reason that I have had some difficulty in getting both chickens and eggs and am looking for a solution of the problem.

Wayne Co.

G. W. H.

I think, perhaps, some of my own experiences will be the best answer to this correspondent's difficulties. For a few years past I have had a flock of hens in which Rhode Island Red blood predominates. Efforts to build up the laying qualities of this flock have been made, the methods frequently mentioned in this column being em-

ployed, and with a considerable degree of success. Pullets make the best winter layers, if hatched at the right time, but each year I make it a point to keep over some of the old birds. These hens lay to some extent all through the fall and winter. They also become broody from time to time. Occasionally the pullets develop the same trait, but as a rule I never set a bird in the cold weather unless I know her to be a true and tried mother. Last winter I had a brood of chicks come out December 8. Every pullet was laying before the end of the following May. At this writing, February 4, we have one hen that has been setting a week, and two more ready for the eggs to be put under them. In a pen of one dozen old birds I have had four or five that have showed signs of broodiness since the first of November. Hens will not set unless they are layers. First get them to laying in the winter and then you will have a few setters at all seasons. As the article in question stated, it is not possible to get any great number of setters in the winter. In a flock of twenty birds, which number was cut down to twelve in December, I could have hatched a clutch of chicks every month in the past year.

N. H.

CHAS. H. CHESLEY.

KEEPING THE FLOCK HEALTHY.

I have 125 chickens and am feeding as follows: Seven a. m., 4 qts. wheat screenings, 4 qts. oats; 10:00 a. m., peck potatoes, cooked, 3 or 4 qts. of middlings, mixed in warm mash; 4:00 p. m., half a bushel of corn chopped on ear. Plenty of oyster shells and warm drink. I want to keep the flock healthy (R. I. Reds) through the winter but am obliged to keep same in coop 8x14 ft. I only get about half a dozen eggs per day. Chickens seem healthy. Am I feeding properly? The flock has run of big yard when the weather permits.

SUBSCRIBER.

There is lacking, in the ration mentioned, some of the chief essentials which go toward large egg production. During the summer the chicken is able to pick up plenty of green food and worms, and in order to get eggs in winter we have to feed something in place of these. To the ration above mentioned some meat or bone meal should be added. Some place the commercial beef scrap in hoppers and allow the hens to eat of it as they will. Others add an ounce or two of it per hen to the ration, mixed in either the warm or dry mash. In place of beef scraps ground green bone or sour milk can be fed. In feeding milk one must use special care in keeping the pan in which the milk is fed, thoroughly clean. It should be cleaned and scalded after each feeding. Green food of some sort should also be fed. There is really nothing better than sprouted oats for this purpose, although cabbage, mangel and other kinds of green food will also do well.

One will find that it is rather hard to keep a hen coop 8x14 in which 125 hens are kept, in sanitary condition. He must give special attention to keeping the coop clean when it is so crowded. It is also quite essential to have good ventilation, as the air quickly becomes foul and the moisture from the hens' breath will congeal on the walls and form frost unless it has some means of escape. The best way to provide ventilation is to turn the coop into the open-front type. If there are windows, take out all of the glass and replace it with wire netting. Muslin curtains may also be placed over the windows, but they should be arranged so that they can be kept raised at all times except when it storms. When hens are kept in such close quarters there need be no fear as to their keeping warm, therefore one should not hesitate about devoting a large share of the south side of the coop to open space for ventilation. In doing this, though, it is necessary to see that all the other sides of the coop are tight, so that the coop will be draft proof.

Michigan Dairymen's Association.

MILKING time and early morning lesson to us is that we can develop hours were forgotten for a few the dairy business to a very much days by the dairy farmers in greater degree than we have it. The attendance at the thirty-first annual cows are very carefully staked out so meeting of the Michigan State Dairy- ed, and other good care given to get men's Association at Flint last week, maximum results. Prof. Anderson al- but the cow and her product were not. They were ever in mind and in so briefly described the dairy districts the proper way. There is no other of Switzerland, Holland and Scotland. business in which kindness and clean- His description of the cheese market liness pay as well as in the dairying of the Netherlands was very good.

Dairy Cow Demonstration.

The opening session was first ad- dressed by J. R. MacDonald, mayor of Flint, who in welcoming the dairymen to the city told them of the good agri- cultural and dairying country around Flint, of Flint's progressiveness and its public institutions. He said that no industry was more closely related to the people than the dairy business. Its products are a natural and com- mon food and much in regard to the health and well-being of the public de- pended upon their condition.

The Importance of Agriculture.

Former Secretary S. J. Wilson, who, for over 20 years served the society in that office responded. He told of the early history of the society and some of the former meetings held at Flint. He was reminded of an expression of Ex-Governor Luce at one of the meet- ings, which was, that if all the indus- tries were destroyed, agriculture would revive them in a year, but if ag- riculture was destroyed the industries would not survive a year.

Prés. F. H. Vandendoom, in his an- nual address, made a fine plea for the grade cow. The grade cow produced nearly all of the dairy products of the county because only five per cent of the cows were pure-bred. A well-bred grade cow almost equals the pure-bred kind in production and the price of the cow is not beyond the purse of the average dairyman as is that of the pure-bred cow. Pure-bred sires should be used for the improvement of the herd and in this respect the sire is considered as half of the herd. Good care should be given, as an increase of 50 per cent in production has been obtained by better care. Currying pays doubly, in increased production of milk and in the improved appear- ance of the cow. The cows should be given plenty of water because it is in many cases the limiting factor in milk production. One herd's production was increased five gallons per day by more frequent watering of the cows. The cow is the greatest animal God left man, therefore we should give her the best of care.

European Dairy Conditions.

As the others on the program for the day were not able to be present, Prof. A. C. Anderson was called upon and gave a very interesting descrip- tion of his visit to the famous dairy districts of Europe, with special ref- erence to the Islands of Guernsey and Jersey. Both of these small islands, Guernsey the size of a half township and Jersey about a township and a half, are famous for the breeds of dairy cows they produce. Their fame is due to the co-operative efforts of the breeders in maintaining the blood of the breeds. In neither island is a cow from elsewhere allowed except that it be slaughtered within 24 hours. Also, any animal sold from the islands is never bought back again. While there is some in-breeding by the use of these methods it is not detrimental because there is great care used in breeding, and on account of the large number of the particular breed on the island there is considerable good stock to select from. On Guernsey there are about 6,000 cows, of which 4,500 are registered; this makes an average of one cow to two acres. The

the dairy business to a very much greater degree than we have it. The cows are very carefully staked out so that there will not be any grass wast- ed, and other good care given to get maximum results. Prof. Anderson al- so briefly described the dairy districts of Switzerland, Holland and Scotland. His description of the cheese market of the Netherlands was very good.

At the evening session Prof. Ander- son gave a demonstration lecture with dairy cows. With several good speci- mens on hand he brought out their good and bad points with regard to their conformity to the dairy type. This was brought out in such an inter- esting manner that it suggested to those present who supposed they knew a dairy cow, many new points on the dairy conformation. After this lecture those in attendance adjourned to a local moving picture show where moving pictures of the various dairy operations were given.

The last three days of the meeting was worse than a three-ring cir- cus, as the cheesemakers, buttermak- ers, ice cream manufacturers, cream- ery owners and managers, and milk producers were all in session at once. The programs were well supplied with subjects of interest to those in- terested in the various auxiliary or- ganizations.

The work of the officers of the state association was so satisfactory during the past year that they were renom- inated with no opposition. The secre- tary-treasurer's report showed steady growth of the association and a good balance in the treasury.

The exhibit hall was filled with all kinds of dairy and creamery equip- ment. This included everything from salt to machinery necessary to make butter by the hundreds of pounds. The exhibit hall was very nicely arranged and all of the exhibits showed off to advantage.

RATION FOR YEARLING HEIFER.

I have a year-old heifer, one-half Holstein and one-half Jersey. I am feeding her one pound of bran and one teacupful of each, corn and oats, ground together, and shelled corn, with alfalfa hay twice a day. She seems to be doing well, that is, she grows but does not get fat. What I want to know is, will I see any ill effects from this ration when I turn her out to pasture in the spring?

Barry Co.

F. M. N.

I would consider this almost an ideal ration for a young growing heif- er. If you have a feed of coarse roughage like oat straw or cornstalks, I believe it would be just as well for the heifer. The present ration is very digestible, and a coarse food would tend to distend the digestive organs more, and would, I believe, be an im- provement. At the same time, a feed of straw or cornstalks once a day would be cheaper than alfalfa hay twice a day.

Again, I believe in keeping the heif- er used to eating some coarse stuff; we always have more or less of this class of food on the farm that must be turned into cash through the dairy cow and we want her to relish it. She will always eat it with relish if she gets an appetite for it when young.

We have yours of recent date in ref- erence to four-line ad space for 12 weeks and have decided to try the same. Our herd is composed entirely of advanced registry cows. The cor- respondence we usually get from your readers indicates that they want some- thing of the very best for about half what an animal of that kind is worth, for instance, a yearling bull for \$50 when a good one, if a steer, would bring \$75 for beef. They do not seem to think it costs anything to develop good producing cows with official re- cords. We have never had to beef any of our males, but we certainly will if we can not get what they are worth. —Dewey C. Pierson, Lapeer county.



The Supremacy of the De Laval Cream Separator

Supreme in Skimming Efficiency

Over 35 years of experience and thou- sands of tests and contests the world over have demonstrated the De Laval to be the only thoroughly clean skim- ming cream separator, under all the varying actual use conditions, favorable as well as unfavorable.

Supreme in Construction

This applies to every part of the ma- chine—to the bowl, the driving mechan- ism, the frame and the tinware. The De Laval patent protected Split-Wing Tubular Shaft Feeding Device makes possible greater capacity, cleaner skim- ming and a heavier cream than can be secured with any other machine.

Supreme in Durability

The De Laval is substantially built. The driving mechanism is perfectly oiled and the bowl runs at slow speed, all of which are conducive to dura- bility and the long life of the machine. While the life of other cream separa- tors averages from three to five years, a De Laval will last from fifteen to twenty years.

Supreme in Improvements

This has been the greatest factor in De Laval success. Not a year goes by but what some improvement is made in De Laval machines. Some of the best engineers in America and Europe are constantly experimenting and testing new devices and methods, and those which stand the test are adopted.

Supreme in Service

With its worldwide organization and with agents and representatives in al- most every locality where cows are milked, no stone is left unturned by the De Laval Company to insure that every De Laval user shall get the very best and the greatest possible service from his machine.

Supreme in Satisfaction

De Laval users are satisfied, users, not only when the machine is new, but during the many years of its use.

Supreme in Sales

Because they are supreme in efficiency, construction, durability, improvements, service and satisfaction, more De Laval Cream Separators are sold every year than all other makes combined.

Order your De Laval now and let it begin saving cream for you right away. Remember, that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York

29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

\$15.95 SENT ON TRIAL AND UPWARD AMERICAN CREAM SEPARATOR

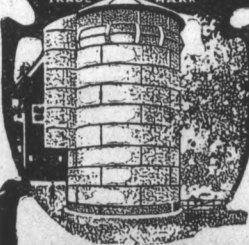
Price, On Trial, Guarantee, Reliability and Protection are fea- tures which make the American Cream Separator stand supreme in its field today. \$15.95 buys

a new easy running, perfect skimming separator that skims warm or cold milk and makes heavy or light cream. Sanitary "marvel" bowl, easily cleaned. Thoroughly protected gears. Picture illustrates our larger capac- ity machines. **20 Year Guarantee** reliable

company. Western orders filled from western points. Whether your dairy is large or small, write for catalog at once. Address **AMERICAN SEPARATOR CO., Box 2061 Bainbridge, N. Y.**



ZYRO Metal Silos have come to stay



They are guaranteed not to crack or col- lapse, are storm- and fire-proof. Keep ensilage in most wholesome condition. Many prominent farmers praise the "ZYRO" Silo—pronouncing it **"THE MOST PRACTICAL SILO MADE"**

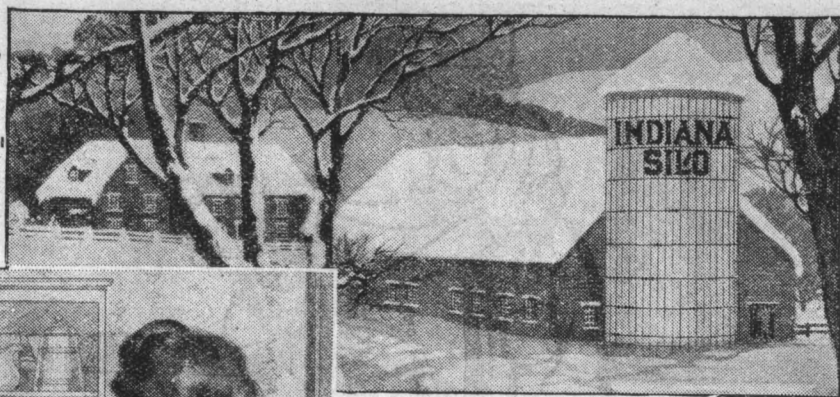
Made of exceptionally pure, rust-resisting galvanized iron. Easily erected with most common tools. Sections are of convenient size for easy handling. Doors cannot shrink or swell, hence are absolutely air-tight.

For other exclusive "ZYRO" points get **Book of Metal Silo Facts FREE**

Fully describes the unique advantages of "ZYRO" Metal Silos and shows them at work on many fine farms. Gladly sent on request. Write a post card today. **The Canton Culvert & Silo Co., Box 220 Canton, Ohio**



ANTI-CORROSIVE



Summer Sunshine in the Winter Churning

WHAT a satisfaction to take from the churn a mass of rich, golden butter, sweet as clover in spring, although the pastures are buried in snow! June triumphant over winter! The principle of conservation revealed in a homely but profitable commonplace. This is a daily experience on farms that are equipped with the

INDIANA SILO

By preserving the juices and fibers as well as the grains, retaining all the sugar and all the succulence that sunshine and rain have contributed to the growing plants, the Indiana Silo reproduces in the winter ration the qualities that give richness and abundance to the dairy yield. The air-tight walls of the Indiana Silo prevent mildew and so perfect is its protection that the heat developed in the curing silage prevents freezing, even in the coldest weather.

Write for Catalog, Booklet and Early Buyers' Money-Saving Proposition.

THE INDIANA SILO COMPANY, 582 Union Bldg., Anderson, Ind.
582 Live Stock Exch. Bldg., Kansas City, Mo.
582 Live Stock Exch. Bldg., Fort Worth, Tex.



SUCCESS PLANS AHEAD!

WHIRLWIND
SIZE "G"

GET THESE
FREE BOOKS NOW

THESE long winter evenings afford the best possible opportunity for that careful thought which is ever the basis of complete success.

Just as you plan ahead the spring crops, plan now the winter supplies for man and beast. You of the South are today planning how best to diversify crops. You of the North how to get the most from diversified farming. You are both thinking Silo—but don't overlook the true economy that lies in the best machine.

Write for our Whirlwind Silo-Filler Catalogue

Are you thoroughly posted on Silo Filler values? Do you know what we offer—what the other fellow offers you for your money? We want you to know why the Whirlwind is the best. Get our free books—get other makers' catalogues. Compare the machines point by point. Learn about the material we use and our exclusive patented features. Then decide—for yourself.

Write for "The Why and How of Silo Filling"

Both books are yours for the asking—and by the way, brother, this offer isn't made for the purpose of sowing on a salesman. We want you yourself to figure out this important matter now, instead of making a hasty, ill-considered choice next summer.

WILDER-STRONG IMPLEMENT CO., Monroe, Mich., Box 13
Silo-Fillers Feed-Cutters Land Rollers and Pulverizers Cattle-Stanchions

These Seven Cows

may all be kept for one year on the product of one acre of land. It's hardly believable. And keeping seven cows for a whole year on one acre goes a long way towards reducing the cost of milk. Ross' Eureka Corn produced in one year on one acre 70 tons and 800 pounds. This enormous crop won our \$50.00 gold prize for the heaviest yield. We offer \$100 in gold to first party breaking this record. We believe this record cannot be broken by any other corn, but Eureka can still beat it. Figuring at the rate of 50 pounds of ensilage per day, which is a very liberal allowance, this amount will feed seven cows for one year, with enough left over for 261 feeds. We believe our crop of Eureka Corn for 1915 planting will germinate better than 95 per cent. Eureka Corn was introduced by us about 25 years ago. It is a white, smooth-dent corn, grows the tallest, usually from 16 to 20 feet, has broad, long leaves and is short jointed. If planted thin, it will yield two and three ears to the stalk. Planting Eureka Corn is as good as an insurance policy to any farmer. It grows where other kinds fail and the yield is tremendous. Last season Eureka Corn was planted in 47 states and the returns were exceedingly gratifying.

Ross' Eureka Ensilage Corn

Grows tallest, has the most leaves, greatest number of ears. The four heaviest acres of this corn in one year gave a total yield of 200 tons and 96 lbs., an average of 50 tons and 24 lbs. per acre. This is not much above the average yield for Ross' Eureka Corn if it is planted under favorable conditions.

You do not need to plant your whole farm when you can fill a 200-ton silo from 4 to 6 acres with Ross' Eureka. The best money you can spend on the farm is for good seed. Poor seed is dear at any price, but good seed is always worth what you pay for it. Ask yourself what corn is worth per bushel that will produce 70 tons and 800 lbs. per acre over ordinary corn. We are not asking you to experiment. We are only asking you to buy seed corn from us that thousands of successful farmers have bought from us and planted on their own farms, year after year, and have found it to be the cheapest and best corn they can buy. Ross' Eureka Corn is always shipped in our trade-marked burlap bags, and ear corn is shipped in rat-proof trade-marked crates holding 70 pounds. Either buy direct of us or some of our agents who have the genuine. Write at once for catalogue and quotations.

ROSS BROS. COMPANY, 37 Front Street, Worcester, Mass.

PLENTY OF PROTEIN.

I have cornstalks, hay, (timothy and June grass mixed, mostly June grass). Feed hay in morning, all the cows will eat. At noon I feed cornstalks in the yard, and at night cornstalks in the barn. Feed 4½ lbs. corn, ground with cob, 2½ lbs. bran, 2 lbs. cottonseed meal twice a day. Each cow gives 20 qts. of milk per day. Is this a properly balanced ration?

Barry Co.

P. L. G.

and also that bean meal, if fed in liberal amounts, makes a hard, tallowy butter that is not desirable. Oil meal tends to produce soft fat and a butter less firm in texture, and is quite desirable for winter feeding. But a portion of the protein can be furnished in bean meal with very satisfactory results.

KEEP THE COWS COMFORTABLE.

Remember that the dairy cow is a daily revenue producer, and is the most valuable asset on the farm. She requires work, and is profitable in proportion to the attention she receives. She is a source of immediate income, and at the same time helps keep up the fertility of the soil. Also remember, that the dairy cow is a mother, and that good care, kind and gentle usage, liberal feeding, and healthful environment are necessary if she is to give good profit from her motherhood. As you measure to the cow, so shall it be measured to you in return.

COST OF KEEPING A HEIFER.

Will you give me figures as to the cost of keeping a heifer from November 1 to May 1 (six months)? She is fed clover hay and cornstalks. A kept this heifer for B (she was 10 months old November 1), and neither one knows what it is worth, but both parties want to do the right thing regarding payments.

Newaygo Co.

W. G. A.

No one can tell the actual cost or very near it. The heifer might be a large animal or a small one. What is the price of clover hay, also the price of cornstalks?

I suggest that you weigh the feed the heifer actually eats and wastes, for one or two days each month and then estimate for the balance of each month. She will waste some; this cannot be helped, but should be charged to the cost just the same. This is the way we estimate the cost of feeding cows in our cow-testing associations. Then charge a fair price for the hay and cornstalks. Let the labor of feeding and caring for the animal offset the manure she produces.

BUCKWHEAT BRAN.

What is the relation of wheat bran to buckwheat bran, as to feed value, pound for pound, as a feed for milch cows and yearlings?

Manistee Co.

W. F. D.

Buckwheat bran is a very uncertain product. It doesn't always go by the same name. Some call it buckwheat hulls bran. Buckwheat bran is the mixture of buckwheat middlings and buckwheat hulls. If the hulls are separated from the middlings they are simply known as buckwheat hulls.

Buckwheat middlings are quite rich in protein, containing 26.7 per cent, but when the hulls are not separated from the middlings the mixture known as buckwheat bran contains only 12.5 per cent protein. The hulls alone are poor stuff worth practically nothing as a food. Wheat bran contains 15.4 per cent protein, therefore one pound of wheat bran would be worth a little more than 1.2 pounds of buckwheat bran.

BEAN MEAL VS. LINSEED MEAL.

What is the value of bean meal, compared with linseed meal, as to amount of protein, feeding value, etc., for dairy cows? Also, which is the cheaper feed with bean meal at \$22 per ton, and linseed meal at \$35?

Saginaw Co.

R. H. B.

Bean meal contains a trifle more than 20 per cent protein, while linseed or oil meal contains about 36 per cent, and as a source of protein at the prices named the bean meal would be the cheaper feed. Certainly some bean meal, under the circumstances, should be used in the ration. It must be borne in mind, however, that bean meal is not as palatable as oil meal.

and also that bean meal, if fed in liberal amounts, makes a hard, tallowy butter that is not desirable. Oil meal tends to produce soft fat and a butter less firm in texture, and is quite desirable for winter feeding. But a portion of the protein can be furnished in bean meal with very satisfactory results.

I have a three-quarter Guernsey two years old to freshen in April.

I do not advocate scrubs or grades, but believe by having them freshen in the fall and starting with a balanced ration before they fall off in milk, they can be made to more than pay their way while we are grading up and working toward better and more profitable ones.

Berrien Co.

F. E. DOANE.

When Writing to advertisers please mention The Michigan Farmer.

Know the Individual Cow.

THE knowledge of the individual cows in the herd is one of the most necessary things in the program of the successful dairyman. There is hardly a problem in the dairy business whose solution does not rest in some measure upon the individuality of the herd. Much has been said about the comparative worth of the different breeds of cattle, but there is more difference in individuals of each of the great breeds, than exists between the breeds.

It is well to decide upon some breed and stick to that decision, but with that matter settled, we are compelled to turn our thoughts to the individuals out of which we expect to evolve our future herd, and secure in whole or in part, our living.

Study of Individuals Profitable.

If we are to improve our herd by better breeding, we must discover our best cows. We do not want to go on from year to year, simply guessing. If we are to build up our herd we want the heifers from our best cows. We can afford to take a great deal of pains to mate the very good cow. We can not hope for great results from the daughter of a poor cow, even if the sire is a good one. If we have no really good cows in our herd, we should know it as soon as possible. Perhaps we may have one or two cows that are of great value, but we have never tested them, and so their splendid performance has been concealed by the small results from the rest of the herd. The very first thing to do if we are to build up our herd, is to make a study of our cows as individuals.

Having discovered the comparative worth of our cows, we can breed the best ones to the sire that will procure the desired results, and knowing their origin, we shall naturally take better care of the calves than we should if we knew nothing of the worth of their dams.

Developing the Individual.

I have written thus far, in a very general way, but I wish it might be possible to convince the average man who keeps cows of the difference between simply keeping a herd along from year to year, milking them and raising their calves without any knowledge of them individually, and breeding and feeding those cows as individuals.

The writer has in his barn just now a heifer that has a right to be worth more than an ordinary cow some day. He knows this, and so he is watching her every day when he is at home. There are a number of heifers in this community that are born well enough to make them objects of interest to their owners. These heifers will receive much better care because of their good breeding.

The writer has become interested in some of them himself, that are miles away. He is interested because he knows the cows and the sire from which they descended. But if it is important for the breeder to know the cow as an individual, it is no less essential to know her in order to feed her properly.

In a general way, people who keep cows feed them to sustain the body, and an allowance above this amount from which to produce milk. There is a wide difference in cows in the disposition of the food they consume above the natural requirements of their bodies. Some will manufacture the surplus food products into fat, and add it to their weight. Others will produce both fat and milk, and others will give more and more milk while the ration is increased. While there are cows and cows that will eat and eat, and eat, and what they do with it, no man has ever yet written or said.

Making the Poor Cow Pay.

The longer I feed cows, the more I

realize the necessity of more knowledge of them as individuals. There are some cows that can hardly be fed too much. They are of the class that keep right on milking more and more until the limit is reached, and do not carry more flesh than they should, no matter how much is fed. But those cows that swallow their food and give neither flesh nor milk in return are not to be trusted to eat until they are ready to stop. They must have someone to think for them. If the owner man knows his business, he can often make such cows pay.

A gentleman told me some time ago how he managed one of these otherwise unprofitable cows. He was a member of the first cow-testing association organized in the United States. One of his cows lacked nearly two dollars of paying for her feed in one month. During the next month, he reduced her feed to the standard fixed in "The Hecker Tables" and she made a profit of over a dollar and a half. If he had known nothing about this cow as an individual she might have lived on, losing money for owner, for years.

It is better for the cow that does not put the food she eats to some good purpose, to be fed no more than she will use with some degree of economy.

Feed the Good Cow Liberally.

On the other hand, the great producer is often injured by scanty feeding. A man of my acquaintance once purchased a very fine grade Jersey heifer from a neighbor. She was a descendant from one of the best families of cows I have ever known. In fact, I have not yet seen a poor animal in that family. They were practically pure-bred Jerseys, but could not be registered.

He paid \$75 for that heifer when she was three years old. A pretty good price for a grade at that time. She was giving 35 pounds of milk per day, which probably tested five per cent. I saw him three months later and asked how the heifer came out.

"I was cheated in that cow. She gives no more than the rest of the herd. She was all right when I got her, but she is not worth a cent more than my cows, now that I have tried her out. 'How much did you feed her?' I asked. 'I fed her as I did the rest,' was his answer.

Of course, I told him that the fault was his. No cow, good nor poor, can make "something out of nothing." The good cow must be fed more than the average cow, because we expect more from her. The man of whom I have written did not furnish this valuable heifer enough food to enable her to work the machinery for the production of milk, up to the limit, and so after borrowing from her body for a time, she refused longer to honor the checks which he drew upon her, that is, she reduced her milk flow to a point where she could still sustain her body. Of course, he was making little more profit from her than from his other cows, but it was his fault. If he had given her the raw material out of which to manufacture the product, she would have justified his faith in her, when he paid for her a higher price than had at that time been paid for any grade cow in our neighborhood.

The lesson to be learned from his experience is, do not feed the poor cow too much, and be very sure not to feed the good cow too little.

Oceana Co. W. F. TAYLOR.

The "save the calf" propaganda is winning followers in various parts of the country, and this is going to be a great help in increasing the beef production. Of late calves arriving in the Chicago market have embraced but a small representation of light vealers, and sales have been made as high as

NO LANK
NO FAN
NO FREEZING
TROUBLE



Let Novo Do It

When you pay a man for pumping water, sawing wood, pitching hay into a mow, etc., you are paying for the highest priced power in the world.

Why don't you quit? There's plenty of work that only a man can do. Get intelligence out of your men and depend on a Novo Engine for power.

If contractors depended on man-power our big constructions—buildings, dams, canals—would never be started. The cost would be out of reach.

Investigate for yourself the labor, time and cost saving possible to you with

NOVO

REG. U.S. PAT. OFF.

ENGINES and OUTFITS

Let the Novo man in your town tell you some real engine facts. Get figures on what *reliable power* will save you.

Consider the features of the Novo Engine. Notice its compactness. The gasoline is in the base. The water is in the hopper around the cylinder.

The light weight, the simplicity,

the easy portability of Novo Engines are advantages no farmer should overlook. You can have your Novo mounted on skids, hand truck or horse drawn truck. Sizes from 1 to 15 horse power.

And don't forget—freezing can't harm a Novo Engine. With the water in the cooling system frozen solid you can start your Novo.

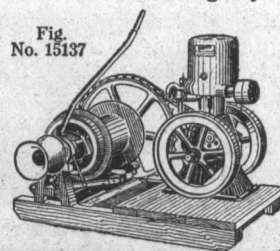
Let Us Talk These Points Over in Person

Resolve to look into the question of Reliable Power today. Fill in and tear off the coupon below or drop us a postal and we will tell you where you can see Novo Engines demonstrated. It is no obligation on your part. It will be up to us to prove that a Novo Engine will give you sufficient reliable power and do it cheaper than any other method you can use.

NOVO ENGINE CO.

CLARENCE E. BEMENT, Sec'y and Manager
561 Willow Street, LANSING, MICHIGAN

Novo Farmers' Handy Hoist. This outfit is built to meet a rapidly increasing demand for a small inexpensive hoist on the farm. This hoist will pay for itself in one season. For unloading hay it is far better than a team. Well worth investigating. Refer to Fig. No. 15137.



MF
Novo
Engine
Company
Lansing, Mich.

Gentlemen:—Without any obligation, please tell me why Novo is the best engine for my requirements. I use—want—an engine for the following purposes

and require about _____ H. P.

Name _____

Address _____

The Michigan Farmer

Established 1843. Copyright 1914.

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.
PHILADELPHIA OFFICE—214-218 Twelfth St.

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

I. R. WATERBURY.....Associate Editors
B. W. WERMUTH.....
F. A. WILKINSON.....
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 responsible for money sent in letters. Address all communications to, and make all drafts checks and postoffice orders payable to, The Lawrence Publishing Co.

We never, unless through error, send The Michigan Farmer beyond the date subscribed to—our subscription price being always due in advance, and sample copies always free. No bills will ever be sent should a subscription through error be continued after expiration.

RATES OF ADVERTISING:

40 cents per line agate type measurement, or \$5.60 per inch (14 agate lines per inch) per insertion. No adv't in serial for less than \$1.20 each insertion. No objectionable advertisements inserted at any price.

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

DETROIT, FEB. 27, 1915.

A FEW LEADING ARTICLES OF THE WEEK.

- Peach Growing as a Specialty.**—The seventeenth of 52 special articles to be published in consecutive issues249
- The Winter Manure Problem.**—A discussion of factors which should be taken into account in the solution of this problem....250
- Early Clover Seeding.**—Comments on the best time to sow and the amount of seed to use.....251
- The Management of Young Turkeys.**—Essentials of success in hatching and rearing young turkeys254
- Know the Individual Cow.**—Illustrating the importance of tests which will give the dairyman accurate knowledge of the capacity of individuals in the herd..259
- Sheep Farming Profitable.**—A concrete example of the possibilities for profit from a flock of sheep upon the average farm.....268
- Spread of Co-operation in Hillsdale County.**—Showing how the co-operative idea has developed from a small beginning in this section270
- The Apple Orchard Costs.**—The cost of different operations in orchard care as demonstrated by the writer's experience.....274

VALUABLE IDEAS!

Every farmer has valuable ideas. Some pass them along for the benefit of their fellows—others do not. Get into the first named class by writing out your ideas, suggestions or criticisms and sending them in. All will be welcomed and utilized as far as practicable in making the Michigan Farmer of the greatest possible value as a clearing house for helpful ideas relating to all branches of Michigan agriculture.

CURRENT COMMENT.

Ample Food Supply. While the wheat market has been soaring in this country, many men including public officials whose public duty has compelled them to look upon the consumer's side of the question have urged the expediency of placing an embargo upon further exports of wheat in order that our own breadstuff supply may be conserved. One of the prominent officials who has recently suggested the expediency of such an embargo is Mayor Mitchell of New York. Last week President Wilson replied to this sug-

gestion, stating incidentally that the Department of Agriculture was in possession of all the facts relating to our supply of breadstuff and that a statement would be made in the immediate future which would remove the evident misunderstanding of a portion of the public on this question. Later a statement was issued by the Department of Agriculture, the facts contained in which are summarized by our Washington correspondent as follows:

"The 1914 wheat crop of the United States was estimated to be 891,000,000 bushels. The estimated surplus carried over from the 1913 crop was about 76,000,000 bushels. There was, therefore, a total available supply of 967,000,000 bushels. As the normal annual per capita consumption of wheat in the United States is about 5.3 bushels, 520,000,000 bushels should meet our normal domestic requirements for food; in addition, 90,000,000 bushels are required annually for seeding; 610,000,000 bushels, therefore, should supply the normal domestic demand. This would leave a surplus of 357,000,000 bushels. Of this surplus about 210,000,000 bushels were exported by January 30. This left 147,000,000 bushels, or 40,000,000 bushels more than our average annual export for the past five years, for export between February 1 and the appearance of the new crop, or for carrying over into the next crop year. The amount is sufficient to permit the export of nearly 1,000,000 a day until July 1, before which time the new crop will begin to be available. This is about the average recent exportation."

The Local Credit Problem.

The problem of rural credit legislation is one which has engaged the attention of many public men, particularly since the investigation of the American Commission in Europe, regarding which a series of descriptive articles is now being published in these columns. This general interest in a problem which is of undoubted importance makes any phase of the credit proposition of interest, particularly at this time, when there is a general tendency toward an abnormal restriction of credit. Of at least such interest is a bill recently introduced in the Michigan Legislature, which provides that a certain minimum of the legal reserve of all life insurance companies doing business in Michigan shall be loaned in the state on the same class of securities to which the law restricts the investment of the legal reserve of domestic corporations of this kind. This bill, it is claimed by its sponsors, is calculated to keep within the state a portion of the money which is added to the legal reserve of foreign insurance companies doing business in this state, by reason of the difference between the premiums collected from and the claim paid to the residents of the state in the regular course of their business.

It would seem that this principle is a just one which could do no injury to legitimate business but which would materially help to solve the local credit problem within our state and thus reduce the likelihood of local business being curtailed by the reduction or withdrawal of credit in times of financial stringency, such as have been experienced at not infrequent intervals in the past.

The Ship Purchase Bill.

The administration ship purchase bill appears to have been effectually side-tracked, so far as the present session of Congress is concerned. Aside from its guise as an emergency measure, however, this bill embodied a principle which is, we believe, quite certain to be a vital issue in future legislative programs. Ostensibly this bill is of an emergency character only, being designed to lend government aid to the establishment of an American merchant marine

through the purchase and operation of ships by a private corporation, so-called, in which the United States government would hold 51 per cent of the stock.

The opposition of this "emergency" bill met it with an emergency argument, by declaring that in purchasing interned foreign ships and putting them into international commerce, the government would purchase with them international complications which would materially increase the danger of our country being drawn into the present European war. In the presentation of this argument dilatory tactics were employed, until a defection in administration forces was finally effected which made it possible to side-track the bill.

Outside of the possible expediency, or inexpediency, of this plan of bridging a war emergency in the maintenance of our foreign trade, this bill involved the principle of government ownership and operation of transportation facilities, which was neither advanced by its sponsors nor discussed by its opponents during the deliberations. Future discussions of similar propositions will doubtless involve an airing of this underlying principle, which was really the rock on which the project was wrecked this time, since the dissenting members of the administration party demanded only that the measure should be made one of a purely emergency character, by limiting its operation to the duration of the war.

The new form which was given to the State Round-up Institute for the first time last year was a pronounced success. For this reason a great many more Michigan farmers should plan on attending the Round-up Institute or Farmers' Week, as it is now called, which will be held at the Agricultural College, March 1-6, inclusive. Under the new plan of procedure lectures and demonstrations upon various farm subjects will be carried on in different sections of the meeting at the same time. The programs are so arranged that the patron of the institute can choose the subject which he prefers to hear discussed and attend such sections of the meeting as offer the topics of greatest interest to him. There will be sections for the ladies where lectures and demonstrations on domestic art and domestic science will be given. In addition the general meetings will be of absorbing interest. Space will not permit the publication of the full program; suffice it to say that there will be discussions of interest to every man and woman who can make it convenient to attend these meetings. There should be a larger attendance at this event than ever before, owing to the fact that its present form will enable the patron to get a greater amount of personal benefit than under the old plan.

Sidelights on Taxation.

At the recent tax conference held in Detroit, Prof. Friday, of the University of Michigan presented an argument for the adoption of a system of income tax in lieu of the personal property tax at present levied for state purposes in Michigan. The argument made for this change in system had at least one point which will appeal to the average citizen of the state, which was that the professional and salaried man who is earning a large income would, under such a system, be called upon to make a reasonable contribution to the cost of conducting the state government, whereas under present conditions he contributes to that cost only indirectly in most instances.

That this proposed innovation was not favored by the members of the association who heard the address is not surprising, since established methods in matters of taxation as in other things are not easily displaced by new

methods for which even the most plausible of arguments may be advanced. While the taxation problem is and ever has been a vexed question, the problem of the just assessment of personal property has been one upon which opinion has differed most vitally. In our own commonwealth various experiments have been tried in order to relieve the so-called double taxation of certain classes of personal property, particularly real estate mortgages.

That none of these experiments have been entirely satisfactory or successful appears from the fact that there is a well-defined opinion in legislative circles that the law relating to this form of personal property tax will again be amended by the present Legislature, although it seems unlikely that any radical change in the system of taxation will be made by that body. It is desirable, however, that every phase of this problem of taxation should be discussed by farmers as well as tax officials and experts, so called, to the end that the ultimate solution of this question may be such as to relieve, rather than add to, the burden of taxation carried by farm and home owners, who are now generally conceded to bear more than their just share of the public burden due to the nature and visibility of their property.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—There has been very little change in the position of troops in either the eastern or western war zones. The Russians seem to have checked the German advance following the former's defeat in eastern Prussia. In Poland no important movements are reported. In southern Galicia the armies have quieted after the repulse of Russian forces by the Austro-German troops. In the Champagne region in northern France the Allied forces have pushed their advance positions forward. The Germans, on the other hand, are said to have made slight gains in the Vosges Mountains. Interest has been turned from the battlefield to the announced blockade of the English coast by Germany. Last Friday night at 12 o'clock the blockade was to become effective; since then three English merchant ships have been reported destroyed by German submarines. The purpose of the blockade is to starve out England. Germany has warned neutral countries of the blockade, which warning has brought protests from the United States and Italy. The use of the American flag by British ships in passing through the danger zone has also brought a note of warning from the United States. There is a possibility of complicating international relations between this country and the warring nations through this peculiar situation. Austria has also inaugurated a submarine campaign against shipping in the Adriatic Sea. The Allied fleets are reported to be bombarding the Dardanelles; aeroplanes are assisting the battleships. Already some of the ports are said to be reduced.

The American steamship Evelyn, with a cargo of cotton for Bremen, Germany, struck a mine off Borkum Island in the North Sea, Sunday, and sank. Her crew was saved.

National.

A new federal drug law will go into effect March 1. According to the provisions of this measure it will be impossible to secure many old-time remedies without a prescription from a physician, a dentist or a veterinarian. The law is framed to protect the public against the careless use of medicines containing dangerous amounts of narcotics or habit forming drugs.

Last Saturday the Panama Exposition at San Francisco was formally opened. All records of attendance at the first day of similar expositions were broken, there being 225,000 persons passing through the gates.

Finnish mine workers of the Calumet copper district have notified all socialists and western federation agitators to quit the district immediately. Five men were given specific orders to leave. Italian miners are also working to oust the agitators.

Frank James the former outlaw died at Excelsior Springs, Mo., last Thursday.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

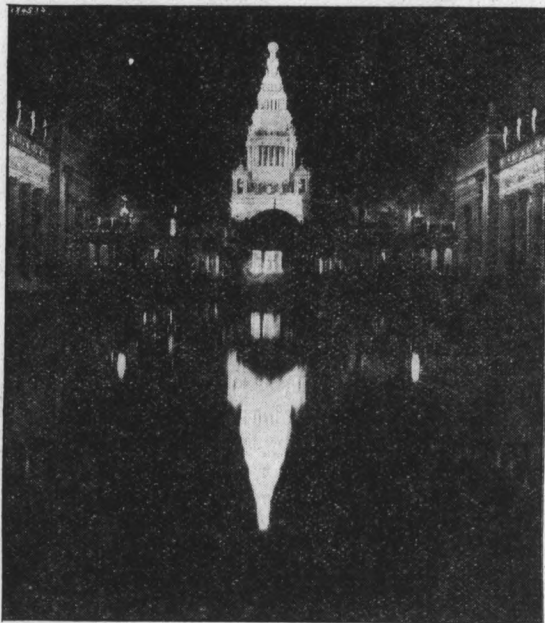
The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

WORLD EVENTS IN PICTURES.



Daughter of Servian Minister of Agriculture.



Copyright by Underwood & Underwood, N. Y.

The Tower of Jewels, Panama-Pacific Exposition.



Lace Mantle once Owned by Mme. Pompadour.



Copyright by Underwood & Underwood, N. Y.

Turkish, French, Jewish, English, Belgian, Indian and Russian Prisoners.



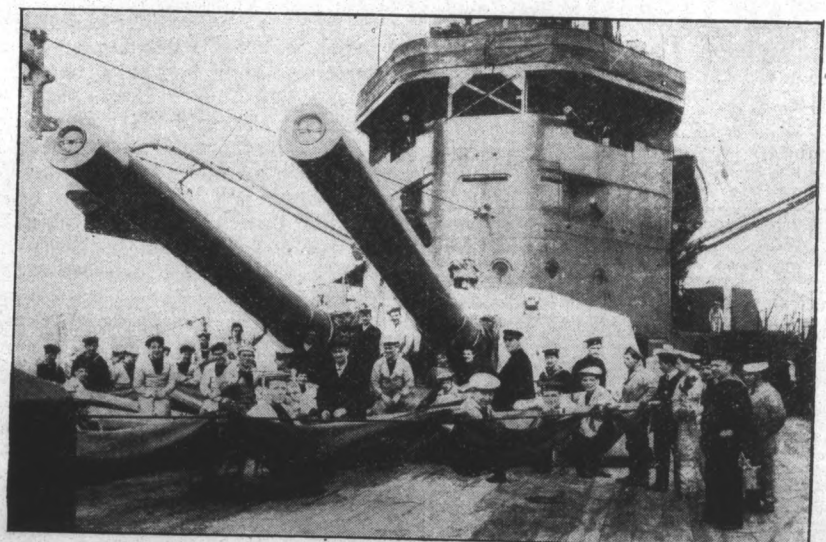
Copyright by Underwood & Underwood, N. Y.

French Farmer's Wife Giving Refreshments to German Prisoners.



Copyright by Underwood & Underwood, N. Y.

German Shells Force Residents of Soissons to Live in Cellars.



Copyright by Underwood & Underwood, N. Y.

Scene on Battleship New Zealand, Presented to England by the Colony.



Neuralgia

There is no need to suffer the annoying, excruciating pain of neuralgia; Sloan's Liniment laid on gently will soothe the aching head like magic. Don't delay. Try it at once.

Hear What Others Say

"I have been a sufferer with Neuralgia for several years and have tried different Liniments, but Sloan's Liniment is the best Liniment for Neuralgia on earth. I have tried it successfully; it has never failed."—F. H. Williams, Augusta, Ark.

Mrs. Ruth C. Claypool, Independence, Mo., writes: "A friend of ours told us about your Liniment. We have been using it for 13 years and think there is nothing like it. We use it on everything, sores, cuts, burns, bruises, sore throat, headaches and on everything else. We can't get along without it. We think it is the best Liniment made."

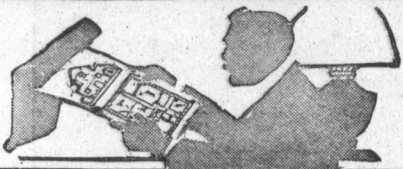
SLOAN'S LINIMENT

is the best remedy for rheumatism, backache, sore throat and sprains.

At all dealers, 25c.

Send four cents in stamps for a TRIAL BOTTLE

Dr. Earl S. Sloan, Inc.
Dept. 22 Philadelphia, Pa.



Let Our Experts Draw up Your FREE Heating Plans

TAKE advantage of our trained experts—be sure of heating every room. Keep down coal bills. Deal direct with manufacturer—save \$25 to \$75 by buying at



Low Wholesale Factory Price

We grant year's test—back guarantee with bank bond—cash or long time credit—easy payments. We pay freight. Blue prints free, whether you order or not—no obligations. Write today for catalog No. 909
Kalamazoo Stove Co., Mfr.
Kalamazoo, Mich.

A Kalamazoo Direct to You

\$150 PER MONTH and EXPENSES

Salary or Commission—Introducing our King Butter Separator. Produces best grade of butter from cream or milk, sweet or sour, in less than 5 minutes. Retail \$5 up. Write for free sample and salary proposition.
De King Mfg. Co., Dept. 171, Chicago, Ill.

WANTED—Farmer with family, to operate farm on percentage basis; exceptional advantages. Must have first-class references. S. B. DUNN, 708 South Clark Street, Chicago, Illinois.

WANTED WORK ON FARM—Young man 21, good habits would prefer up-to-date Stock or Dairy Farm, have had experience, can furnish references. Frank Hardy, R. No. 2, St. Louis, Mich.

Conducted Government Examinations. Can help you secure Railway Mail or other Government Positions. Trial Examination free. Ozment, 17 R. St. Louis.

LEARN AUCTIONEERING

at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught in five weeks. Write today for free catalog. Jones Nat'l. School of Auctioneering 25 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres

Wanted Agents to sell Farmers Account Books. Quick seller, Big Profits, Exclusive Territory. Address L. L. Syphers, Fort Wayne, Indiana

When writing advertisers please mention The Michigan Farmer.

Winston of the Prairie

BY HAROLD BINDLOSS.

Copyrighted by Frederick A. Stokes Company.

CHAPTER XXI.

Maud Barrington laughed softly. "Isn't the question useless?"

"No," said Winston, a trifle hoarsely now.

The girl touched his arm almost imperiously as he turned his head again.

"Lance," she said, "men of your kind need not deal in subterfuge. The wheat and the bridge you built speak for you."

"Still," persisted Winston, and the girl checked him with a smile.

"I fancy you are wasting time," she said. "Now, I wonder whether, when you were in England, you ever saw a play founded on an incident in the life of a once famous actor. At the time it rather appealed to me. The hero, with a chivalric purpose assumed various shortcomings he had really no sympathy with—but while there is, of course, no similarity beyond the generous impulse, between the cases—he did not do it clumsily. It is however, a trifle difficult to understand what purpose you could have, and one cannot help fancying that you owe a little to Silverdale and yourself."

It was a somewhat daring parallel, for Winston, who dare not look at his companion and saw that he had failed, knew the play. "Isn't the subject a trifle difficult?" he asked.

"Then," said Maud Barrington, "we will end. Still, you promised that I should understand—a good deal—when the time came."

Winston nodded gravely. "You shall," he said.

Then, somewhat to his embarrassment, the two figures moved further across the window, and as they were silhouetted against the blue duskness, he saw that there was an arm about the waist of the girl's white dress. He became sensible that Maud Barrington saw it too, and then that, perhaps to save the situation, she was smiling.

The two figures, however, vanished, and a minute later a young girl in a long white dress came in, and stood still, apparently dismayed when she saw Maud Barrington. She did not notice Winston, who sat further in the shadow. He, however, saw her face suddenly crimson.

"Have you been here long?" she asked.

"Yes," said Maud Barrington, with a significant glance toward the window. "At least ten minutes. I am sorry, but I couldn't help it. It was very hot in the other room, and Allender was singing."

"Then," said the girl with a little tremor in her voice, "you will not tell?"

"No," said Maud Barrington. "But you must not do it again."

The girl stooped swiftly and kissed her, then recoiled with a gasp when she saw the man, but Maud Barrington laughed.

"I think," she said, "I can answer for Mr. Courthorne's silence. Still, when I have an opportunity, I am going to lecture you."

Winston turned with a twinkle he could not quite repress in his eyes, and with a flutter of her dress the girl whisked away.

"I'm afraid this makes me an accessory, but I can only neglect my manifest duty, which would be to warn her mother," said Maud Barrington.

"Is it a duty?" asked Winston, feeling that the further he drifted away from the previous topic the better it would be for him.

"Some people would fancy so," said his companion. "Lily will have a good deal of money, by and by, and she is very young. Atterly has nothing but an unprofitable farm; but he is an

honest lad, and I know she is very fond of him."

"And would that count against the dollars?"

Maud Barrington laughed a little. "Yes," she said quietly. "I think it would if the girl is wise. Even now such things do happen, but I fancy it is time I went back again."

She moved away, but Winston stayed where he was until the lad came in with a cigar in his hand.

"Hallo, Courthorne!" he said. "Did you notice anybody pass the window a little while ago?"

"You are the first to come in through it," said Winston dryly. "The kind of things you wear admit of climbing."

The lad glanced at him with a trace of embarrassment.

"I don't quite understand you, but I meant a man," he said. "He was walking curiously, as if he was half-asleep, but he slipped round the corner of the building and I lost him."

Winston laughed. "There's a want of finish in the tale, but you needn't worry about me. I didn't see a man."

"There is rather less wisdom than usual in your remarks tonight, but I tell you I saw him," said the lad.

He passed on, and a minute later there was a cry from the inner room. "It's there again! Can't you see the face at the window?"

Winston was in the larger room the next moment, and saw, as a startled girl had evidently done, a face that showed distorted and white to ghastliness through the window. He also recognized it, and running back through the hall was outside in another few seconds. Courthorne was leaning against one of the casements as though faint with weakness or pain, and collapsed when Winston dragged him backwards into the shadow.

He had scarcely laid him down when the window opened, and Colonel Barrington's shoulders showed black against the light.

"Come outside alone, sir," said Winston.

Barrington did so, and Winston stood so that no light fell on the pallid face in the grass. "It's a man I have dealings with," he said. "He has evidently ridden out from the settlement and fallen from his horse."

"Why should he fall?" asked the Colonel.

Winston laughed. "There is a perfume about him that is tolerably conclusive. I was, however, on the point of going, and if you will tell your hired man to get my wagon out, I'll take him away quietly. You can make light of the affair to the others."

"Yes," said Barrington. "Unless you think the man is hurt, that would be best, but we'll keep him if you like."

"No, sir. I couldn't trouble you," said Winston hastily. "Men of his kind are also very hard to kill."

Five minutes later he and the hired man hoisted Courthorne into the wagon and packed some hay about him, while, soon after the rattle of wheels sank into the silence of the prairie, the girl Maud Barrington had spoken to rejoined her companion.

"Could Courthorne have seen you coming in?" he asked.

"Yes," said the girl, blushing. "He did."

"Then it can't be helped, and, after all, Courthorne wouldn't talk, even if he wasn't what he is," said the lad. "You don't know why, and I'm not going to tell you, but it wouldn't become him."

"You don't mean Maud Barrington?" asked his companion.

"No," said the lad, with a laugh.

"Courthorne is not like me. He has no sense. It's quite another kind of a girl, you see."

CHAPTER XXII.

Colonel Barrington is Convinced.

It was not until early morning that Courthorne awakened from the stupor he sank into soon after Winston conveyed him into his homestead. First, however, he asked for a little food, and ate it with apparent difficulty. When Winston came in he looked up from the bed where he lay, with the dust still white upon his clothing, and his face showed gray and haggard in the creeping light.

"I'm feeling a trifle better now," he said; "still, I scarcely fancy I could get up just yet. I gave you a little surprise last night?"

Winston nodded. "You did. Of course, I knew how much your promise was worth, but in view of the risks you ran, I had not expected you to run up at the Grange."

"The risks!" said Courthorne, with an unpleasant smile.

"Yes," said Winston wearily, "I have a good deal on hand I would like to finish up here and it will not take me long, but I am quite prepared to give myself up now, if it is necessary."

Courthorne laughed. "I don't think you need, and it wouldn't be wise. You see, even if you made out your innocence, which you couldn't do, you rendered yourself an accessory by not denouncing me long ago. I fancy we can come to an understanding which would be pleasanter to both of us."

"The difficulty," said Winston, "is that an understanding is useless when made with a man who never keeps his word."

"Well," said Courthorne dryly, "we shall gain nothing by paying each other compliments, and whether you believe it or otherwise, it was not my intention to turn up at the Grange. I was coming here from a place west of the settlement, and you can see that I have been ill if you look at me. I counted too much on my strength, couldn't find a homestead where I could get anything to eat, and the rest may be accounted for by the execrable brandy I had with me. Anyway, the horse threw me and made off, and after lying under some willows a good deal of the day I dragged myself along until I saw a house."

"That," said Winston, "is beside the question. What do you want of me? Money in all probability. Well, you will not get it."

"I'm afraid I'm scarcely fit for a discussion now," said Courthorne. "The fact is, it hurts me to talk, and there's an aggressiveness about you which isn't pleasant to a badly-shaken man. Wait until this evening, but there is no necessity for you to ride to the outpost before you have heard me."

"I'm not sure it would be advisable to leave you here," said Winston.

Courthorne smiled ironically. "Use your eyes. Would anyone expect me to get up and indulge in a fresh folly? Leave me a little brandy—I need it—and go about your work. You'll certainly find me here when you want me."

Winston, glancing at the man's face, considered this very probable, and went out. He found his cook, who could be trusted, and said to him, "The man yonder is tolerably sick, and you'll let him have a little brandy and something to eat when he asks for it. Still, you'll bring the decanter away with you, and lock him in whenever you go out."

The man nodded, and making a hasty breakfast, Winston, who had business at several outlying farms, mounted and rode away. It was evening before he returned, and found Courthorne lying in a big chair with a cigar in his hand, languidly debonaire but apparently ill. His face was curiously pallid, and his eyes dimmer

(Continued on page 264).

Land O' Nod Stories.

By HOWARD T. KNAPP.

Some of Mr. Rabbit's Troubles.

"Gee, whiz, Tinker, but I wish I didn't have to go to school," said Billy Be By Bo Bum as he joined the merry little elf in the White Forest one winter afternoon.

"Now, what is the matter?" asked Tinker Teedle Tee, who was always so jolly and cheerful himself that he could not bear to see anyone else unhappy. "Have you moved to Grumble Corner of Crosspatch Town since I last saw you?"

"I'm not a crosspatch at all," replied Billy. "But sometimes I get so tired of school and study that I wish I was a rabbit so I would never have to open a book again."

"So you think Bunny has an easy time, do you?" asked Tinker, spreading his wings and flying up on Billy's shoulder. "Well, just remember this, Billy Boy, Mr. Rabbit has more enemies than any of the Little People who make their homes in the White Forest. How would you like it if every time you stepped out of your house to play or go to the store on an errand for your Mother, some big, savage animal was waiting to pounce on you and tear you to pieces with its sharp claws and cruel teeth. And then, when you were tucked in your bed for the night, all snug and comfy, how would you like to have to sleep with one eye and one ear open, so you would be ready, at a second's notice, to jump out of bed and run for your life to escape from some terrible foe?"

"Why, I wouldn't like it at all," said Billy, shuddering at the very thought of such a thing. "In fact, I would be so scared I don't believe I could run even if my life depended on it."

"Well, that's just the kind of a life Mr. Rabbit leads," continued Tinker. "At every turn some bird or beast of prey is waiting to swoop down on him, and man, with his guns and dogs and ferrets, is the most terrible enemy of all. Every hour of the day or night Bunny is in danger and must be ready at any minute to match his wits and speed against the prowlers always seeking to make a meal of him."

"But, after all, he doesn't have to go to school," said Billy, who was still rather grumpy and out of sorts.

"Well, of course, he doesn't go to the same kind of school you do," Tinker replied. "But he must always be learning the ways of the woods, the habits of the other Little People, and thinking up new tricks to fool his enemies. Why, Billy Boy, if Bunny wasn't always learning something new he couldn't live a week in the White Forest, for Slinker the Weasel or Too Whoo the Owl would catch him the first time he hopped out of his hole."

"Who teaches him all these things?"

asked Billy, who had no idea Bunny had to study just the same as he did.

"Old Mrs. Mother Rabbit," Tinker replied. "She is the greatest teacher in the world. As soon as her children are born she starts to train them, and Bunny never grumbles at his teacher like some little boys I know."

"Almost the first lesson Bunny has to learn is to 'freeze' and he never forgets that lesson as long as he lives, for it is the best trick he knows to fool an enemy."

"Why under the sun does he want to freeze?" asked Billy. "I should think he would a great deal rather keep warm. Anyway, I don't see how freezing would help him escape his enemies."

"When Bunny freezes he just stops whatever he is doing and sits as still as he can," replied Tinker. "Maybe he will be hopping along one of his runways, thinking of the delicious cabbages growing in Farmer Meadow's garden, when suddenly Busybody the Bluejay screams a warning that an enemy of the Little People is afoot. Now in a case like that what would you do, Billy Boy, if you were in Mr. Rabbit's place?"

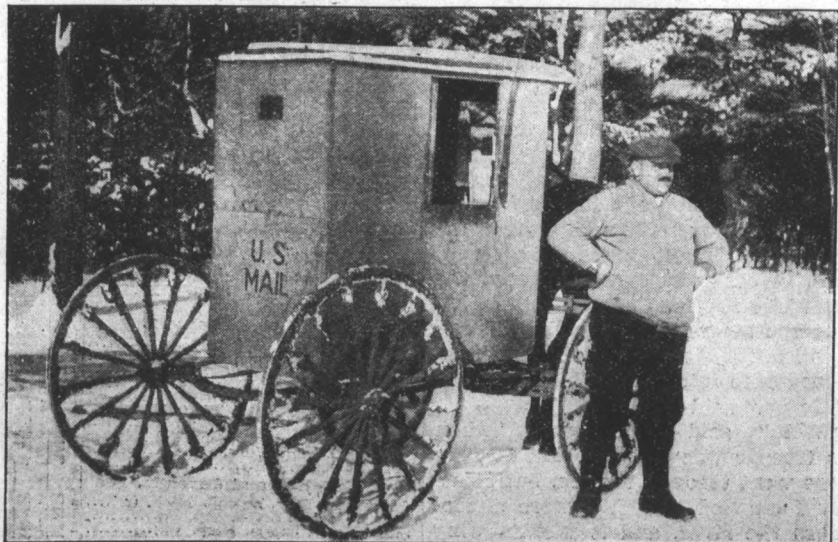
"I would run for home just as fast as I could," Billy replied.

"Which would be the surest way of getting caught before you had taken a dozen jumps," Tinker replied. "For as soon as you started to run, Slinker or Hookbeak the Hawk, or whatever bird or beast of prey was stirring, would be sure to see you. Mr. Rabbit knows that, so he stops short in his tracks and doesn't move a muscle, not even to wink. And that's what I mean by freezing."

"But can't Hookbeak see him just the same when he's sitting still?" asked Billy.

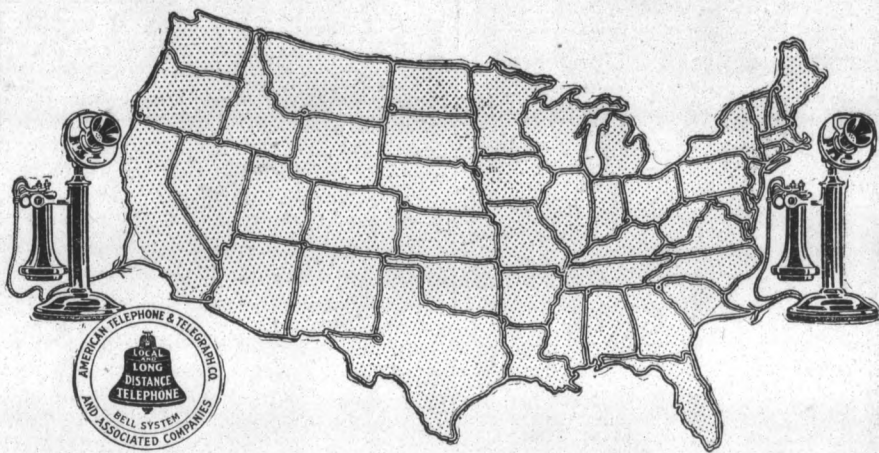
"No, siree, Bob," replied Tinker. "Bunny has no way of defending himself against his enemies and is the most helpless of all the Little People when it comes to a fight. So old Mother Nature has given him a coat of darkness to help him fool his enemies. She has made his fur exactly the color of dead leaves and the bark of trees. So when Mr. Rabbit freezes it is almost impossible to see him, for he is the same color as his surroundings. Even if Hookbeak the Hawk looks straight at Bunny, he isn't likely to see him, or if he does, he thinks it is only a lump of dirt or a piece of bark. Then when the Hawk looks the other way, Mr. Rabbit dives into the nearest briar patch and is safe."

So whenever danger threatens, Bunny always freezes, and while he is sitting still makes up his mind what to do if the trick fails."



The Rural Carrier Has Emancipated Farm Life from the Sovereignty of Isolation. L. C. Lachat, R. F. D. Carrier, Goose Pointe, Mich.

The Telephone Unites the Nation



At this time, our country looms large on the world horizon as an example of the popular faith in the underlying principles of the republic.

We are truly one people in all that the forefathers, in their most exalted moments, meant by that phrase.

In making us a homogeneous people, the railroad, the telegraph and the telephone have been important factors. They have facilitated communication and intervisiting, bringing us closer together, giving us a better understanding and promoting more intimate relations.

The telephone has played its part as the situation has required. That it should have been planned for its present usefulness is as wonderful as

that the vision of the forefathers should have beheld the nation as it is today.

At first, the telephone was the voice of the community. As the population increased and its interests grew more varied, the larger task of the telephone was to connect the communities and keep all the people in touch, regardless of local conditions or distance.

The need that the service should be universal was just as great as that there should be a common language. This need defined the duty of the Bell System.

Inspired by this need and repeatedly aided by new inventions and improvements, the Bell System has become the welder of the nation. It has made the continent a community.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service

Canadian Wheat

to Feed the World

The war's fearful devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and there is an unusual demand for Canadian wheat. Canada's invitation to every industrious American is therefore especially attractive. She wants farmers to make money and happy, prosperous homes for themselves while helping her to raise immense wheat crops.

You can get a Homestead of 160 acres FREE and Other lands can be bought at remarkably low prices. Think of the money you can make with wheat at its present high prices, where for some time it is liable to continue. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of Oats, Barley and Flax.

Mixed farming is fully as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required either for beef or dairy purposes. Good schools, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government this year is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or

M. V. McINNES,
176 Jefferson Ave., Detroit, Mich.
Canadian Government Agent.

WHAT DO YOUR SAVINGS EARN?

We offer for the safe investment of your funds

MUNICIPAL BONDS

Yielding from 4% to 6% income, many issues tax free.

These bonds are paid from taxes—by coupons collectable thru any bank—and all the property of the Cities, Counties or other Political Subdivisions issuing them is pledged for the prompt payment of principal and interest.

We absolutely own all the bonds we offer and have spared no time and expense to make sure of their security and legality.

They are in denominations of \$100, \$500 and \$1000, and can be purchased on

OUR PARTIAL PAYMENT PLAN

if you so desire. This is explained in general information given in free booklet "Bonds of our Country," which will be sent on request. Write for one today.

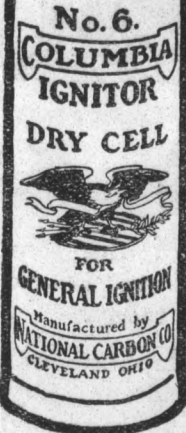
BOND DEPARTMENT

THE NEW FIRST NATIONAL BANK,

COLUMBUS, OHIO

When Writing to advertisers please state that you saw their ad. in The Michigan Farmer.

COLUMBIA

Batteries
Light Up!

Wire up a mazda lamp in the barn with Columbia Batteries. Get ample light at the turn of a switch. Used short periods will last for months. No expensive equipment. But be sure to get Columbia Batteries. Cost no more—last longer. Sold and used everywhere for all battery needs.

Made in U. S. A. by National Carbon Co., Cleveland, Ohio

Convenient Fahnestock Spring Clip Binding Posts—no extra charge.

TAKE OFF YOUR HAT TO THE

MYERS PUMPS, HAY TOOLS AND DOOR HANGERS possess selling merit, give satisfaction, and are durable. Look for the Name MYERS before you buy. Ask your dealer or write us.

DOOR HANGERS

F. E. MYERS & BRO.
ASHLAND PUMP AND HAY TOOL WORKS
405 Orange St. ASHLAND, OHIO.

6 CORDS

THE IRELAND WOOD SAWING MACHINE

That's what you can do with

Table mounted on grooved rolls. Saw above center so it cuts down and in—not against operator. Logs moved easily—almost self feeding. Does a week's work in a day. Pays big dividends. Write for printed matter—also on our Drag Saw Machines, Saw and Shingle Mills and Hoists. Unequalled value on Charnas Belting.

Irland Machine & Foundry Co., 33 State St., Norwich, N.Y.

Make Money Growing Potatoes

O. K. Champion Line

Cutters, Sorters, Diggers, Sprayers

Descriptive matter free. Write for it.

Our No. 22 Planter

Is automatic; one man and team plant five acres or more a day; Our No. 25 Planter plants absolutely 100 per cent correct, a seed piece to every bill.

CHAMPION POTATO MACHINERY CO.
145 CHICAGO AVENUE HAMMOND, INDIANA.

You Can Mix Concrete

Properly only with a good mixer. Hand mixing is hard work and wastes material. Get a mix a minute with a

Van Duzen Mixer

Various Sizes Sold as Low as \$49.50

Hand or engine power. Mounted on skids—easily moved about. Pays its cost in material saved.

FREE Booklet on What To Use and How to Mix and Lay Concrete. Write today.

THE VAN DUZEN-ROYS CO.,
403 Hartman Bldg., Columbus, Ohio.

WANTED—AN IDEA: Who can think of simple ideas, they may bring you wealth. Write for "Needed Inventions" and "How to get your Patent and Your Money." **RANDOLPH & CO. PATENT ATTORNEYS, DEPT. 67, WASHINGTON, D. C.**

FOR SALE: All tools and machinery in a fully equipped cheese factory. Price reasonable. Address, **WILL C. PRICE, Ohio, Michigan.**

Where Life is at its Best.

By HAROLD BEREMAN.

I BELIEVE in the farm. I believe it is nearer the natural life of man than living in cities. I believe it is not only the best place, but the only place in which to bring up children. No spot on earth is absolutely perfect. There are compensations in rural life that more than offset its drawbacks.

Health is the greatest blessing given to an individual. It is our first concern, for without it all else is naught. The greatest lure of the country is its health-giving welcome. The clean air; the bright sunshine; the wide spaces with their soothing touch—no balm of science can equal it.

Peace is another "greatest blessing." Men have longed for peace since the days when homes were made. Men have fought for peace, long and bitterly, suffering anguish of body and spirit and dying alone on ghastly battlefields for this precious thing. Where is peace more sure—peace from noises and smells and the discomforts of crowded centers of population—than in the great out-doors where nature smiles as she broods over her children of the field and wood?

Freedom! Ah, how men have struggled for ages for this priceless boon. Up from the beast, and the cave man, and the wild barbarian into the veneer of what we call civilization today, have been ever struggled for liberty. Human beings living together on a plane of brotherhood, in families, communities, states and nations can

never be free from responsibility nor from law, but man's spirit may be free if he wills it. In the quiet, peaceful, health-bringing aloofness of the farm he achieves all the freedom he can use. And why strive for that we cannot use?

While I believe in the farm as offering greater chances for health, strength and happiness, there is no valid reason why also it should not be the means of as much material comfort as is good for us. There is no reason why it should not offer opportunities for self-expression in the pursuit of knowledge, in the creation of useful and necessary things for humanity, in the purely material aspects of life—the accumulation of modest wealth for all that this brings in larger living, and for the laying up of a store against old age.

While it is true that vast fortunes are not made on the farm, let us be thankful for it, for a vast fortune means great luxury and luxury spells mental, moral and physical degeneration. While it is clear that ordinary farming is not a highly remunerative occupation, intelligent farming may be made as profitable as any sane man, not afflicted with the itch for sordid gain, desires it to be.

The farm has its drawbacks to be sure—what place has not? But the advantages are far greater and more numerous, and for the man or woman who loves the deep, simple, natural pleasures, the drawbacks are as nothing.

WINSTON OF THE PRAIRIE.

(Continued from page 262).

than they had been, but there was a sardonic twinkle in them.

"You take a look at the decanter," said the man, who went up with Winston, carrying a lamp. "He's been wanting brandy all the time, but it doesn't seem to have muddled him."

Winston dismissed the man and sat down in front of Courthorne.

"Well?" he said.

Courthorne laughed. "You ought to be a witty man, though one would scarcely charge you with it. You surmised correctly this morning. It is money I want."

"You had my answer."

"Of course. Still, I don't want very much in the meanwhile, and you haven't heard what led up to the demand, or why I came back to you. You are evidently not curious, but I'm going to tell you. Soon after I left you, I fell very sick, and lay in the saloon of a little desolate settlement for days. The place was suffocating, and the wind blew the alkali dust in. They had only horrible brandy, and bitter water to drink it with, and I lay there on my back, panting, with the flies crawling over me. I knew if I stayed any longer it would finish me, and when there came a merciful cool day I got myself into the saddle and started off to find you. I don't quite know how I made the journey, and during a good deal of it I couldn't see the prairie, but I knew you would feel there was an obligation on you to do something for me. Of course, I could put it differently."

Winston had as little liking for Courthorne as he had ever had, but he remembered the time when he had lain very sick in his lonely log hut. He also remembered that everything he now held belonged to this man.

"You made the bargain," he said, less decisively.

Courthorne nodded. "Still, I fancy one of the conditions could be modified. Now, if I wait for another three months, I may be dead before the reckoning comes, and while that probably wouldn't grieve you, I could, when it appeared advisable, send for a magistrate and make a deposition."

"You could," said Winston. "I have, however, something of the same kind in contemplation."

Courthorne smiled curiously. "I don't know that it will be necessary. Carry me on until you have sold your crop, and then make a reasonable offer, and it's probable you may still keep what you have at Silverdale. To be quite frank, I've a notion that my time in this world is tolerably limited, and I want a taste of all it has to offer a man of my capacities before I leave it. One is a long while dead, you know."

Winston nodded, for he understood. He had also during the grim care of the lean years known the fierce longing for one deep draught of the wine of pleasure, whatever it afterwards cost him.

"It was that which induced you to look for a little relaxation at the settlement at my expense," he said. "A trifle paltry, wasn't it?"

Courthorne laughed. "It seems you don't know me yet. That was a frolic, indulged in out of humor, for your benefit. You see, your role demanded a good deal more ability than you ever displayed in it, and it did not seem fitting that a very puritanical and priggish person should pose as me at Silverdale. The little affair was the one touch of versimilitude about the thing. No doubt my worthy connections are grieving over your lapse."

"My sense of humor had never much chance of developing," said Winston grimly. "What's the matter with you?"

"Pulmonary hemorrhage," said Courthorne. "Perhaps it was born in me, but I never had much trouble until after that night in the snow at the river. Would you care to hear about it? We're not fond of each other, but after the steer-drivers I've been herding with, it's a relief to talk to a man of moderate intelligence."

"Go on," said Winston.

"Well," said Courthorne, "when the trooper was close behind me, my horse went through the ice, but somehow I crawled out. We were almost across the river, and it was snowing fast, while I had a fancy that I might have saved the horse, but, as the troopers would probably have seen a



For rheumatism, gout, or lumbago use

CAMPHORATED
Vaseline

Reg. U. S. Pat. Off

Gets right to the seat of the trouble and gives quick and grateful relief.

Camphorated "Vaseline" is also strongly recommended as a soothing, healing ointment for gathered breasts.

Put up in handy metal capped glass bottles. At drug and general stores everywhere. Illustrated booklet describing all the "Vaseline" preparations mailed free on request.

CHESEBROUGH MFG CO.
(Consolidated)

23 State Street, New York City

Michigan Farmer's Club List.

For the benefit and convenience of our subscribers we have arranged the following list of papers on which we can save them money. Besides the money, they save the trouble and expense of sending each order separately.

EXPLANATION.—The first column gives the paper's regular subscription price. The second column price is for the Michigan Farmer and the other paper, both for one year. Add 50 cents when the Michigan Farmer is wanted three years, or \$1.00 if the Michigan Farmer is wanted five years. The third column price is for those who are paid ahead on the Michigan Farmer from one to five years and want the other paper only; such orders must be sent to us direct. All combination orders may be given to our agents or sent to us, as is most convenient.

Any number of other papers may be added at third column prices. Write for prices on publications not listed. We can save you money.

We send sample copies of the Michigan Farmer only.

Mention if you are a new or renewal subscriber. Renewals will be dated ahead from their present date.

NAME OF PUBLICATION.	See explanation above			
Daily, (6 a Week) on R. F. D. only.	\$	\$	\$	
Free Press, Detroit.....	2 50	2 50		
Journal, Detroit.....	2 50	2 50		
Times, Detroit.....	2 00	2 00		
Herald, Grand Rapids, Mich.....	2 50	2 25		
News, Grand Rapids.....	2 00	2 00		
Press, Grand Rapids.....	2 00	2 25		
Courier-Herald, Saginaw, Mich.....	2 50	2 00		
News, Saginaw.....	2 00	2 00		
Tribune, Bay City, Mich.....	2 00	2 10		
Blade, Toledo, Ohio.....	2 00	2 05		
News-Bee, Toledo, Ohio.....	2 00	2 05		
State Journal, Lansing, Mich.....	2 00	2 00		
Chicago Herald.....	3 00	3 10		
Tri Weekly Newspapers				
World, N. Y. City.....	1 00	1 20		75
Semi Weekly Newspapers				
Journal, Detroit, Mich.....	1 00	1 15		70
Weekly Newspapers				
Blade, Toledo, Ohio.....	1 00	1 00		55
Commoner, Lincoln, Neb.....	1 00	1 05		60
Enquirer, Cincinnati, O.....	1 00	1 05		55
Produce News, Chicago.....	1 00	1 05		60
Cattle, Sheep, Swine, Poultry, etc.				
American Bee Journal, Hamilton, Ill. (w).....	1 00	1 50		60
American Poultry Journal, Chicago, (m).....	1 00	1 20		75
McClure's Magazine, N. Y. City, (m).....	50	80		35
American Sheep Breeder, Chicago, (m).....	1 00	1 35		90
American Swineherd, Chicago, (m).....	50	75		35
Breeders' Gazette, Chicago, (w).....	1 00	1 45		95
Poultry Weekly, Boston, Mass.....	1 00	1 30		85
State, Grand Rapids, Mich.....	1 00	1 10		75
Green's Fruit Grower, Rochester, N. Y. (w).....	1 00	1 20		75
Hoar's Dairyman, Fort Atkinson, Wis.....	1 00	1 20		75
Jersey Bulletin, Indianapolis, Ind. (w).....	1 00	1 35		90
Kimball's Dairy Farmer, Waterloo, Ia. (s-m).....	1 00	1 70		75
National Sportsman, Boston, Mass. (m).....	1 00	1 20		75
Poultry Keeper, Quincy, Ill. (m).....	50	80		35
Poultry Pointers, Grand Rapids, Mich.....	50	70		25
Poultry Success, Springfield, O. (m).....	50	75		25
Reliable Poultry Journal, Quincy, Ill. (m).....	50	80		35
Swine Breeders' Journal, Indianapolis.....	50	80		35
Michigan Poultry Breeder (m).....	50	70		25
Popular Magazines.				
Everybody's Magazine, N. Y. City, (m).....	1 50	1 60		1 15
Esquire, Philadelphia, Pa. (m).....	1 50	1 60		1 15
McClure's Magazine, N. Y. City, (m).....	1 50	1 60		1 15
Musician, Boston, Mass. (m).....	1 50	1 55		1 10
People's Home Journal, N. Y. City, (m).....	50	85		40
Red Book Magazine, Chicago, Ill. (m).....	1 50	1 55		1 10
Review of Reviews, N. Y. City, (m).....	3 00	3 00		
Ladies' or Household.				
Delineator, N. Y. City, (m).....	1 50	1 60		1 15
Designer, N. Y. City, (m).....	75	1 05		60
Housewife, N. Y. City, (m).....	50	80		35
Ladies World, New York City.....	1 00	1 15		70
McCall's Magazine, N. Y. City, (m).....	50	75		30
Mother's Mag., Elgin, Ill. (m).....	1 50	1 55		1 15
Pictorial Review, N. Y. City, (m).....	1 00	1 00		
Woman's Home Companion, N. Y. City, m.....	1 50	1 60		1 15
Woman's World, Chicago, (m).....	35	60		15
Today, Chicago (m).....	50	70		20
Religious and Juvenile.				
American Boy, Detroit, Mich. (m).....	1 00	1 00		55
Boys Magazine, Smithport, Pa.....	1 00	75		20
Little Folks, Salem, Mass. (m).....	1 00	1 20		75
Young People's Weekly, Elgin, Ill. (w).....	75	95		5
Youths Companion, Boston, Mass.....	2 00	2 25		00

NOTE—If the Michigan Farmer is wanted 3 years add 50 cents to the second column price, or \$1 if wanted five years.

mounted man, I let him go. The stream sucked him under, and though you may not believe it, I felt very mean when I saw nothing but the hole in the ice. Then, as the troopers did not seem inclined to cross, I went on through the snow, and, as it happened, blundered across Jardine's old shanty. There was still a little prairie hay in the place, and I lay in it until morning, dragging frash armfuls around me as I burnt it in the stove. Did you ever spend a night, wet through, in a place that was ten to twenty under freezing?"

"Yes," said Winston dryly. "I have done it twice."

"Well," said Courthorne, "I fancy that night narrowed in my life for me, but I made out across the prairie in the morning, and as we had a good many friends up and down the country, one of them took care of me."

Winston sat silent a while. The story had held his attention, and the frankness of the man who lay panting a little in his chair had its effect on him. There was no sound from the prairie, and the house was very still.

"Why did you kill Shannon?" he asked, at length.

"Is anyone quite sure of his motives?" said Courthorne. "The lad had done something which was difficult to forgive him, but I think I should have let him go if he hadn't recognized me. The world is tolerably good to the man who has no scruples, you see, and I took all it offered me, while it did not seem fitting that a clod of a trooper without capacity for enjoyment, or much more sensibility than the beast he rode, should put an end to all my opportunities. Still, it was only when he tried to warn his comrades he threw his last chance away."

Winston shivered a little at the dispassionate brutality of the speech, and then checked the anger that came up on him.

"Fat, or my own folly, has put it out of my power to denounce you without abandoning what I have set my heart upon, and after all it is not my business," he said. "I will give you five hundred dollars and you can go to Chicago or Montreal, and consult a specialist. If the money is exhausted before I send for you, I will pay your hotel bills, but every dollar will be deducted when we come to the reckoning."

Courthorne laughed a little. "You had better make it seven fifty. Five hundred dollars will not go very far with me."

"Then you will have to husband them," said Winston dryly. "I am paying you at a rate agreed upon for the use of your land and small bank balance handed me, and want all of it. The rent is a fair one in face of the fact that a good deal of the farm consisted of virgin prairie, which can be had from the government for nothing."

He said nothing further, and soon after he went out Courthorne went to sleep, but Winston sat by an open window with a burned-out cigar in his hand staring at the prairie while the night wore through, until he rose with a shiver in the chill of early morning to commence his task again.

A few days later he saw Courthorne safely into a sleeping car with a ticket for Chicago in his pocket, and felt that a load had been lifted off his shoulders when the train rolled out of the little prairie station. Another week had passed when, riding home one evening, he stopped at the Grange and, as it happened, found Maud Barrington alone. She received him without any visible restraint, but he realized that all that had passed at their last meeting was to be tacitly ignored.

"Has your visitor recovered yet?" she asked.

"So far as to leave my place, and I was not anxious to keep him," said Winston, with a little laugh. "I am sorry he disturbed you."

Maud Barrington seemed thoughtful.

ful. "I scarcely think the man was to blame."

"No?" said Winston.

The girl looked at him curiously, and shook her head. "No," she said. "I heard my uncle's explanation, but it was not convincing. I saw the man's face."

It was several seconds before Winston answered, and then he took the bold course.

"Well?" he said.

Maud Barrington made a curious little gesture. "I knew I had seen it before at the bridge, but that was not all. It was vaguely familiar, and I felt I ought to know it. It reminded me of somebody."

"Of me?" and Winston laughed.

"No. There was a resemblance, but it was very superficial. That man's face had little in common with yours."

"These faint likenesses are not unusual," said Winston, and once more the girl looked at him steadily.

"No," she said, "of course not. Well we will concede that my fancies ran away with me, and be practical. What is wheat doing just now?"

"Rising still," said Winston, and regretted the alacrity with which he had seized the opportunity of changing the topic when he saw that it had not escaped the notice of his companion. "You and I and a few others will be rich this year."

"Yes, but I am afraid some of the others will find it has only further anxieties for them."

"I fancy," said Winston, "you are thinking of one."

Maud Barrington nodded. "Yes. I am sorry for him."

"Then it would please you if I tried to straighten out things for him? It would be difficult, but I believe it could be accomplished."

Maud Barrington's eyes were grateful, but there was something that Winston could not fathom behind her smile.

"If you undertook it. One could almost believe you had the wonderful lamp," she said.

(Continued next week.)

SLIDING DOWN HILL.

BY ALONZO RICE.

From the low-bending skies there's a flurry

Of white flakes, and now in a scurry

The snowbirds arrive; teamsters hurry,

For sharper the air grows and chill.

To the breezes the children are flinging

Red scarfs, and from attics are bringing

Gaily-painted hand sleds, the while

singing

In chorus of coasting down hill.

Though keen winds from northland

are biting,

The smooth snow-clad slope looks inviting,

And with laughter and shouts all inciting

To joy with a hearty good will;

Gay comrades are they: Paul and

Freddy,

With Rhoda and Ruth. "Are you

ready?"

And Dick, with a hand that is steady,

Is guiding his sled down the hill.

Beneath the red runners swift flying

The white track, and hills are replying

To the echoes of joy, each one trying

To excel in a trial of skill;

Just the sport for a girl and a boy

meant,

And nothing can dull their enjoyment;

Not even the up-hill's hard employment,

For the next trip of coasting down hill.

Ice-enameled, the red-haws are gleaming,

The low sun from cloud-folds is beaming

On the snow-crusted surface where dreaming,

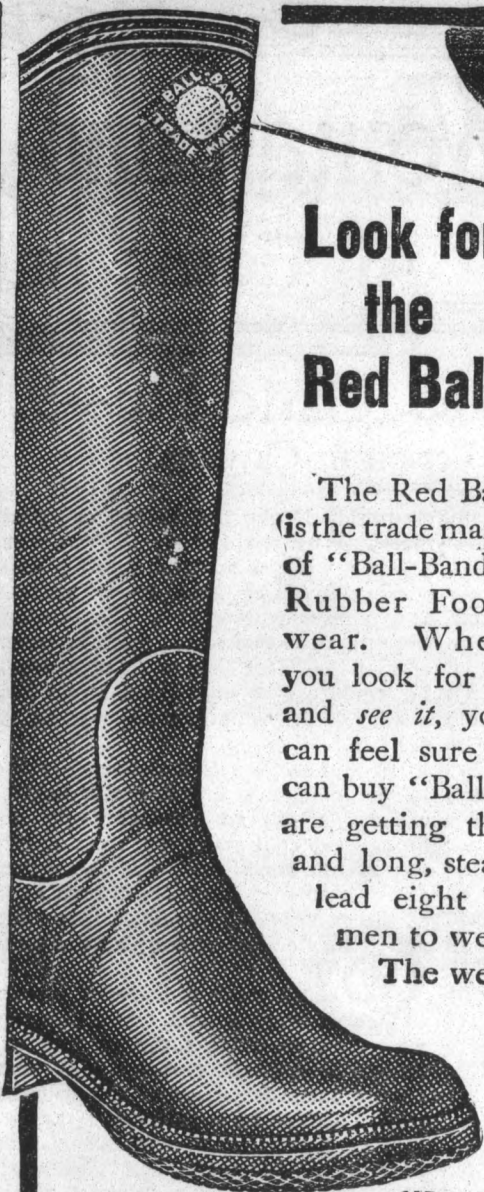
Hide the dairy and sweet dandelil;

In her storehouse, has Summer a treasure,

A joy that can give them such pleasure,

That will fill to the brim their hearts' measure,

Like the rapture of coasting down hill?



Look for the Red Ball

The Red Ball is the trade mark of "Ball-Band" Rubber Footwear. When you look for it and see it, you can feel sure of the quality. You can buy "Ball-Band" and know you are getting the solid foot comfort and long, steady, reliable wear that lead eight and one-half million men to wear "Ball-Band."

The weak points in ordinary rubber footwear are the strong points in "Ball-Band."

"BALL-BAND"

A big reason so many men wear "Ball-Band" Rubber Footwear is this: "Ball-Band" gives so much longer wear that when you figure the cost per day's wear, "Ball-Band" becomes the lowest priced footwear that is for sale.

Over 50,000 merchants sell "Ball-Band." If you have any difficulty locating a store that sells "Ball-Band," write us and we'll tell you a merchant near you who sells it.

Write anyway for our free booklet, "More Days Wear"

It tells you how to properly take care of good rubber footwear so as to make it last longer.

MISHAWAKA WOOLEN MFG. CO.
319 Water Street
Mishawaka, Ind.
"The House That Pays Millions for Quality"

Bargains in Slightly Used Cars

All sizes and makes—Touring, Roadster or convertible for trucking and delivery purposes.

Prices—\$100 to \$800.

WETMORE-QUINN CO., 279 Jefferson Ave., Detroit

Address—Used Car Dept.



30 DAYS FREE TRIAL

and freight prepaid on the new

1915 "RANGER" bicycle. Write at once

for our big catalog and special offer.

Marvelous improvements. Extra-

ordinary values in our 1915 price offer. You can-

not afford to buy without getting our latest propo-

sitions. WRITE TODAY

Boys, be a "Rider Agent" and make

big money taking orders for bicycles and supplies.

Get our liberal terms on a sample to introduce the

new "RANGER."

TIRES, equipment, sundries and everything

in the bicycle line half usual prices. Factory prices

on Motorcycle and Automobile Supplies

Mead Cycle Co., Dept. L-77 Chicago



We Custom Tan

Horse Hides or

Cattle Hides for

Robes at \$3.50 each

W. W. WEAVER,

Reading, Mich.

Seed Corn

Oats, Barley, Potatoes, Alfalfa; 1200 acres. Catalog free. W. N. SCARFF, New Carlisle, Ohio

Pull Out The Stumps With The Hercules
All Steel, Triple Power Stump Puller
Biggest stump pulled in five minutes or less. Clears an acre of land a day. Makes your stump land money land. 30 days free trial—3 year guarantee. Get our new book and special low price offer now. Hercules Mfg. Co., 937 23rd St., Centerville, Ia.





Woman and Her Needs

At Home and Elsewhere



The Domestic Crucible—9.

John Takes a Lesson in Carving.

WHICH part of the chicken do you prefer?" John Ludlow held the carving knife and fork awkwardly above the nicely browned fowl and tried to look unconcerned at his wife's mother as he spoke. Hang it all, why did she make him so nervous? He'd known her all his life and never felt uncomfortable when she was around, so long as he was John Ludlow, bachelor. Why should the fact that she was now Mrs. John Ludlow's mother make him get red in the face when he looked at her and feel as if he had been stealing chickens? She looked at him now as if she expected him to skate the bird off the platter and spill the gravy all over the clean Sunday cloth. The funny papers were right about mothers-in-law. They certainly got a fellow's nerve.

"Oh, I'll take a wing and just a little of the breast," Mrs. Martin's deprecating voice broke into his soliloquy.

"The idea!" Grace interrupted. "Give her half the breast and a leg and lots of stuffing. Mother's so used to eating the wings and neck so the rest of us can have a good part she thinks she has to. But you don't here, mother dear, you're company, and you're going to have the best every time you come. Isn't she, John?"

"Certainly, of course. The wings go to the carver," John hastily agreed, wishing to goodness the carver had been Grace, and the chicken had been cut up in the kitchen as it was when they were alone. He could have gotten through the ordeal of serving very

creditably if she had helped out that much. Why the dickens had he ever let her work him into carving and serving anyway? None of the men of his family ever did it. But when Grace set the two plates down in front of him that first day, as if, of course, he would carve, what could he do but gratify her? And now he was in it for life.

He plunged the fork desperately into the chicken's breast and tried to cut off a leg as unconcerned as though the cold sweat were not standing out on his brow. Why the deuce did everyone at the table always look at the carver? Why couldn't they look at each other and make pleasant conversation?

"You could carve it better if it was the other way around," Mrs. Martin suggested as, after three or four attempts John finally detached a leg and paused for fresh courage. "The head should always be toward the left."

"Oh, that's my fault," Grace said contritely. "I never can remember which way the head goes and I didn't take time to look it up in my cook book today. I thought I was sure it was toward the right. Turn the platter around, John dear."

"I'll remember next time myself," John remarked grimly as he turned the platter about, tipping over the gravy boat in the process.

"Right side up with care," laughed Mr. Martin, catching the boat just in the nick of time. "Not a drop, son, not a drop, and lucky for you. I tell you, it's a fearful thing to get the first spot on a brand clean cloth."

John flashed him a look of gratitude. Evidently Father Martin had carved fowls in the presence of his mother-in-law.

"And you cut off the wings first," prompted Mrs. Martin. "First the wings, then the legs, then take out that bone between the leg and body and slice the breast. It's easy as can be if you go at it right."

John's face flushed hotly. "Awful good of her to tell me how," he thought. "She better get up and do it if it's so easy." But he managed to say quite naturally, "Oh, it'll come all right now I've got it turned round. It was just awkward for me the other way." A happy thought came to him. He put the severed leg on a plate and passed it to Grace.

"Give your mother some potatoes, you."

Grace. No use of her waiting for everything to get cold while I dissect this specimen," he said. "That'll keep her busy for awhile," he thought. "If she'll only look at her plate now instead of at me I'll get through before time to start the chores."

But Mrs. Martin was far too polite to eat while the rest waited. "Oh, thank you, John, thank you, Grace. I am no better than the rest," she remonstrated. "I'll just wait until you are all ready."

Seeing there was no way out, John set to in desperation. Much to his relief he found he could carve more easily with the head to the left, and gathering courage he warmed to his task. Soon dinner was really in progress.

"I want to see that sugar beet field of yours," said Mr. Martin, reaching for a slice of Grace's nut bread. "Grace says it will run 12 tons to the acre. I'm counting on 15 tons for mine," he boasted. "Never saw such a crop in my life."

"Fifteen tons!" exploded John, who had seen the field, "if it goes 10 you'll be lucky."

"I'm willing to bet you a \$5.00 hat I'll show 15 tons to the acre," came back Mr. Martin. "A \$5.00 hat for you if I don't get 15 tons."

"Done," said John. "And I'll pick out my hat tomorrow, for you won't run above 10 tons. Yes, nine and a half or nine would be more like it," he added, enjoying Mr. Martin's discomfiture.

"One of them's sure of a new hat, Grace," interposed Mrs. Martin, "but I don't hear anything about hats for us."

"Suppose she's afraid Grace'll have to tie a handkerchief over her head like the beet weeders," John fumed. "Trying to make her dissatisfied already. 'I'll buy Grace a hat if I have to buy her father one,' he flashed, "and he can buy you one when he buys mine. For he'll have to buy it. Fifteen tons to the acre indeed."

"Let's go out and look at your beets now," said Grace, pushing back her chair. "If we eat any more we'll die of suffocation."

"I hope you are not working too hard," Mrs. Martin worried as they started down the lane. "You know you never had to get up mornings and get breakfasts at home, nor do any fruit canning, nor carry wood and water. You must have John keep the woodbox filled for you."

"Oh, mother, don't begin to worry about me," begged Grace. "Anyone would think I was an invalid to hear

"No, you're not an invalid, and I don't want you to be," replied her mother. "That's why I want to be sure John is taking care of you."

Ahead John caught the remarks and ground his teeth in rage. Confound it, why couldn't women mind their business? He and Grace had got along tip-top, and now if her mother came and put a lot of notions into her head about not being strong maybe she'd begin to think she wasn't. Why couldn't mothers-in-law see that when you got married you were a family all by yourselves and even mothers had no right to ask questions about what you did? Thank Heaven, she lived just far enough away not to come very often, and too near to stay long when she came.

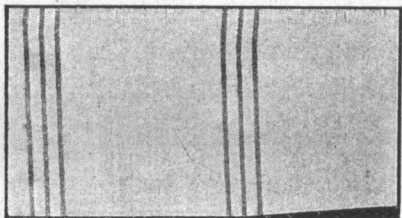
"Oh, stop your fussing about Grace," Mr. Martin called back. "She never was sick a day in her life and she's a great deal stronger than you ever were. Farm work didn't kill you."

"No," sighed Mrs. Martin. "But I've often wished it had instead of just tiring me out and leaving me to endure."

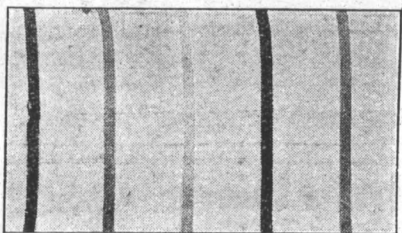
"How far down the lane did you say that field was?" Mr. Martin jerked out. "No use reasoning with a woman if she's your wife," he commented in an undertone. "Just pretend to agree with 'em and think what you darn please."

"I guess you're right," John agreed. A hazy feeling that, after all, getting married did mix things up some way began to take possession of him. Mrs. Martin was still Mrs. Martin, but things didn't seem the same. And Grace Ludlow wasn't exactly like Grace Martin. Or was she? And had he changed? Or what was it that was different?

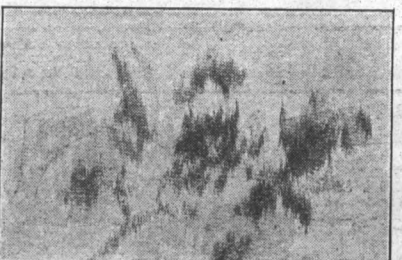
DEBORAH.



Two Smart Tub Crepes.



Chiffon Taffetas in Floral Designs.

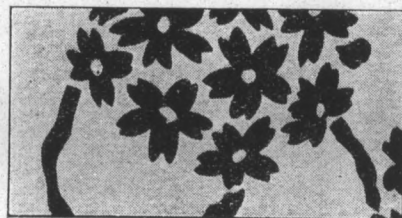


The New Colors and Fabrics.

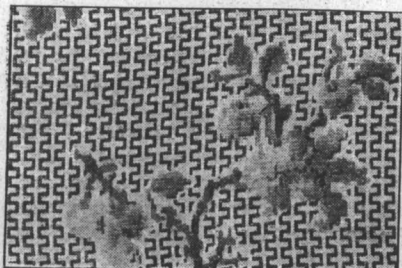
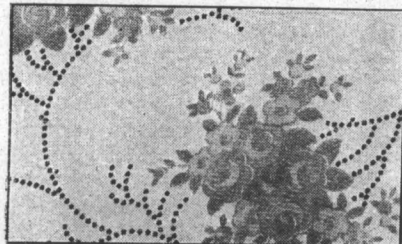
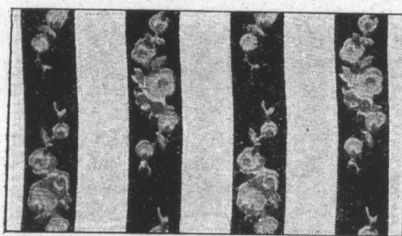
WHO said "hard times?" Certainly not the shopkeepers whose business it is to entice women into decking themselves with fabrics and colors which no self-respecting lily would presume to wear. Sellers of women's wear have ignored talk of money panic, calmly forgotten the European war, stopped their ears to cries for economy and charitable appeals and filled their windows with a display of suits, frocks, hats and furbelows even more than usually attractive and expensive.

New shades, new styles and new cloths, or at least new names for old fabrics, have been brought forth to

make women forget the talk of calamity howlers. And most conspicuous of the new things is the sand shade which is being shown in everything, from hats to gaiters. You all know the color of sand, just common everyday roadside sand, so you need no further description of the new color. Also, you do not need to be told that only the woman with a girl's complexion, either real or applied, dare try to wear it. The sand shade was not made for the woman with a fallow skin and faded hair and eyes. It must have clear pink and white bloom. On the models in the windows it is rather attractive, a small close-fitting hat,



Pussy Willows for Waists.



neat suit and smart boots all of the same shade, and it will undoubtedly have something of a run of popularity. But its popularity will undoubtedly be shortlived as there will be so many women who cannot wear it.

A little darker than the sand shade is the putty shade, also a new and fashionable color. Both the sand and the putty shades are usually relieved by a touch of rose color, deep rose on the begonia order. Being such neutral colors they demand something warm to give them life. Following these, black is one of the strongest colors of the season. For party dresses black charmeuse, crepe meteor, satin Imperial and poulette de soie are very good, while for suits the fine corded goods in black are popular.

The war can not be entirely ignored by the world of fashion, so we have battleship gray, a gray with a bluish cast. Then there is Arizona silver, merely a silver gray, and Delaware peach, both good colors. Of course, there is the usual line of blues, and a little green, but for the moment these old reliable friends are overshadowed by the new ones already mentioned.

Most pronounced of changes, perhaps, is the change in the width of the skirts. From the skirt 55 inches wide around the bottom, we have jumped to the one two and a half yards around, which is quite a jump, and one that strikes few women with favor. Modistes predict that the old-new wide skirt will not last, as emancipated woman much prefers the scander one to which she has grown accustomed and attached. Somewhere between the extreme narrow one and the extreme wide one a happy medium will be reached before fall, they say, and we will have a skirt which will suit everyone.

The wide skirt with its flouncings has created a demand for taffetas, and this always good silk promises to be a good seller this season. Taffeta will not have the field to itself, though the Pussy willow taffetas and the chiffons come in alluring colors and patterns. Bordered taffetas are strong, and there are many in floral designs which make up attractively, especially when veiled. It is predicted, however, that the crepe meteors, crepe de chine and other satin finished silks will win out in the end.

In the cloths for suits and gowns there are many new ideas and many old ones made over. Bengaline silk and wool poplins in a heavy weight; Epingle cloth, which is a tight weave a little like the old granite cloth, in sand and putty shades; covert cloth, gaberdines, chuddah cloth, a cloth made of worsted and mohair, in green, damson and sand shades, are all strong for suits. The black and white checks, so long popular for skirts and suits, are also shown. French twills, or serges, and silk and wool poplins are popular fabrics for dresses.

For tub waists nothing is prettier nor more practical than the wash crepes. They are attractive in colors, soft to the touch and so easily laundered they cannot fail of popularity. These crepes come in white with pin stripes of every color you care to name, and sell at from \$1.19 to \$1.59 cents the yard. Tub pongees are good for waists, and range in price from 79 cents to 98 cents the yard.

DEBORAH.

WHOOPING COUGH.

The relative mortality from whooping cough, scarlet fever and diphtheria is essentially the same throughout the country, whooping-cough being almost everywhere more fatal than scarlet fever and less fatal than diphtheria. Whooping-cough, instead of being a trifling affair as it is usually considered to be by the laity, is of the utmost gravity. It is a notifiable disease in only 29 states. The health officers of many of these states say, moreover, that very little attention is

paid by physicians to the law requiring notification. Isolation is required by law in seven states and "modified" isolation in two others. It is recommended in another, but the secretary of the board of health states that it is rarely enforced. Few state or city health boards make any effort to prevent it, while there is almost no provision for the hospital treatment of whooping-cough in this country.

Whooping-cough should be made everywhere a reportable disease as in the case of small-pox, scarlet fever and diphtheria. The house should be placarded and the inmates instructed by the health authorities as to the seriousness of the disease in infancy and the methods to be employed to prevent contagion. The patients should be separated from the other children in the family, if they are under five years of age, or removed to special hospitals, constructed on the "shack" plan in order to give the children the maximum amount of fresh air.

Children with catarrhal symptoms, in whom there is any reason to suspect the possibility of whooping-cough, should be excluded from school. The community should be required to establish hospitals not only to take care of those children that cannot be or are not properly isolated at home, but also to take care of those babies and children ill with the disease that cannot be properly treated in their homes.

It can be confidently predicted that when the physicians and the public understand what whooping-cough really means, when proper regulations for its control are established and enforced, and when sufficient hospital accommodations for its care are provided, whooping-cough will cease to be the scourge which it now is.

PACKING A BOX FOR CHINA.

BY L. M. THORNTON.

The first player says, "I'm going to pack a box for China and I put in an apple." The choice of what article is put in lies wholly with the player. The second says, "If you pack a box for China we'll put in an apple and a bed." Again the speaker names any article he may choose. The third player must repeat what the others have said, with an additional article. The fun lies in the effort to remember all that is in the box when the game has continued for some time. A mistake bars the player from further participation in the game.

RECIPES.

Household Editor:—I see by the Michigan Farmer that some lady has made a mistake in giving what she thought was a recipe for making that most delicious dish, apple butter.

She says to put some apples in the oven, after being pared and cored, put some water on them and stir them. This does not make apple butter.

If the parties desiring a recipe will pick ten bushels of nice clean Snow apples, and ten bushels of fine sweet apples, and five bushels of any other kind, the taste of which is nice, and wash with clean water, then take to a clean man that makes nice clean cider and have the juice pressed out, then let settle for 24 hours, then dip out in a nice clean boiling kettle or a perfectly clean copper boiler, then let come to a boil and take enough apples to be quartered and cored, to make a filling, about three pecks to 32 quarts of cider, then stir with a paddle with holes, so the apples will pass through, and stir carefully and constantly so it does not become too dark or scorch, they will have apple butter, the kind our grandmothers used to make. If they wish, they may put in seasoning, but it does not require any, and never used to be made that way. It is not necessary to put any sugar in this kind as the sweet apples give it the required sweetness and perfect blend. —C. E. N.

How The ECLIPSE

Hot-All-Over Top Saves Heat



By our exclusive top arrangement the fire has to pass under all six lids before escaping. This makes your fuel do double duty.

Compare it with the Old Way! Note how—in the ordinary stove—the heat skips half the top. The Eclipse Way keeps the entire top hot without heating oven—unless desired.

ECLIPSE STOVES and RANGES

Have many other patented exclusive features which make them leaders. Write us for name of the Eclipse Dealer. He will explain the Hot-All-Over Top and also the Adjustable Damper—how they regulate heat, save fuel, time and labor.

Ask him, also, about the oversize oval Firebox, with no "dead" corners, no dirt, no waste. He joins with us in guaranteeing you satisfaction.

Write us today for FREE book, handsomely illustrated.

Send for the Free Book Today

Eclipse Stove Company
Mansfield, Ohio



\$1.50 Value for
98c.

PREPAID.
Remember! Style, Fit,
Quality, are what we sell.

We cater to the mothers who realize the satisfaction of having their children well dressed.

We manufacture all of our own garments and so can and will guarantee every dress or money returned.

This number is 1217 and is made of a good grade of plain gingham, trimmed with striped gingham to match. Three white crocheted buttons on each side of vest. Open all the way down the back.

Colors—Pink, Blue, Tan. Sizes—6, 8, 10, 12, 14. Be sure to state color and size. Ask for our catalog showing other styles and our line of 100 articles.

DETCAR MFG. CO.,
21 West Atwater St.
DETROIT - MICH.

Is Your House and Barn LIGHTED SATISFACTORILY?

Our Business is Lighting Country Homes—absolutely safe—economical—convenient. Our guarantee with every system. Write us.

Night Commander Lighting Co.
Dept. E, Jackson, Michigan.

HOME COMFORT FOR WINTER DAYS

Think of the comfort an indoor closet would bring to you and your family these stormy days.

The Wolverine Chemical Closet

makes it possible for you to have a toilet in your home. No Water or Sewer Connection Required.

The outside closet means exposure, sickness and doctor's bills. The Indoor Closet means health, comfort and convenience.

Send us the name of your Hardware or Implement Dealer and we will send you our Catalog giving complete description of the Wolverine Chemical Closet System.

Guaranteed Odorless and Sanitary.

DAIL STEEL PRODUCTS CO.
710 E. Main St., Lansing Mich.

PURE HONEY:—Comb and Extracted, sent by parcel post. Write for prices. E. E. MOTT, Glenwood, Michigan.

DO YOU NEED FARM HELP? We always have able-bodied young men, experienced and inexperienced, who want farm work. Our object is to encourage farming among Jews; no charges to employer or employee. If you need good, steady, sober men, write to Jewish Agricultural Society, 714 W. 12th Street, Chicago, Illinois.



When Snow Lies Deep

the unfailing Unadilla Silo provides the nourishing, succulent green fodder necessary for greatest production when dairy products bring best prices. Most reliable, durable and convenient silo made. Liberal discount on orders placed now. Write today for descriptive catalogue, free wall calendar, prices and terms. Agents wanted.

UNADILLA SILO CO., Box Z, Unadilla, N. Y.

DON'T Pay Two PRICES HOOSIER Stoves & Ranges FREE

To try in your own home for 30 days. Show your friends. Freight paid by us. Send it back at our expense if you do not want to keep it. You can buy the best at Actual Factory Prices. Our new improvements absolutely surpass anything ever produced. Save enough on a single stove to buy your winter's fuel. All HOOSIER STOVES Guaranteed for Years. Send postal today for large FREE Catalogue, showing large assortment to select from. No Obligations.

HOOSIER STOVE CO.
131 State St., Marion, Ind.

Wisconsin Fishing Company

Green Bay, Wis., Dept. Y.

Choice Fish Specialists

Fish dealers come and fish dealers go.

Our business is the result of eleven years steady growth and close attention to the service of our customers. Our price list is full of quality bargains.

Beacon BURNER FREE

FITS YOUR OLD LAMP.

100 Candle Power incandescent pure white light from (kerosene) coal oil. Beats either gas or electricity. COSTS ONLY 1 CENT FOR 6 HOURS.

We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Burner FREE. Write today. AGENTS WANTED.

HOME SUPPLY CO., 28 Home Bldg., Kansas City, Mo

The "BEST" LIGHT

Reading, study or work is a pleasure when done under the soft, brilliant rays of the "Best" Light. No other illumination so effective or cheap. Costs only 2c a week. No smoke, dirt nor odor. Over 200 styles. Write for catalog. Agents wanted everywhere.

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

Summing up the whole tire question

INVESTIGATE tires, as you would farm machines! You find that standard makes except Ajax have an anticipated life of 3500 miles. Ajax tires offer more value, because Ajax Tires alone are guaranteed in writing for 5000 miles. Get this extra service! Decide now on Ajax Tires and save from \$4 to \$20 a tire, according to the wheel size you use.

**AJAX
TIRES**
Guaranteed
in writing
**5000
MILES**

"While others are claiming
Quality we are guaranteeing it."

AJAX-GRIEB RUBBER CO.
1796 Broadway, New York City
Factories: Trenton, N. J.



**YOU CAN SAVE
\$25 to \$50**

When You Buy a **BOHON 'Blue Grass' BUGGY**
My free Buggy Bargain Book tells you how I save you this money. I build these unequalled buggies in my factory. Improved machinery and skilled workmen make low manufacturing costs. You get the advantage in a rock bottom price. When you buy my buggy I put money in your pocket.

BOOK OF BUGGY BARGAINS FREE

A big 180-page red-hot book. Most complete buggy and harness catalog ever issued. Illustrated in colors from photographs. Tells about my factory tests. Explains my 30-day free road trial and my unlimited guarantee on workmanship and material. Send postal for this FREE book today.

D. T. BOHON
2048 Main St.
Harrodsburg, Ky.



**SAVE 3/4
THE COST**
With the Farmers' Cement Tile Machine.



**Make Your Own
Drain Tile**

Makes tile 8 to 12 in. in diameter, 12 1/2 in. long. One man or boy makes 500 a day by hand—1200 by power. Tile thoroughly cured by patent process. Machine and tile used by U. S. Department of Agriculture and Experiment Stations. Thousands of farmers have doubled yield of land by under-drainage and saved 75% of cost through this machine. You can do as well. Saves cost of handling and breakage. Makes perfect tile, \$3 to \$5 a thousand. 10 Days' free Trial—Direct from Factory to you.

Any outfit you wish shipped on absolutely free trial—direct from the factory at factory prices.

DRAINAGE BOOK FREE

Tells just what you want to know about under-drainage—how to take levels, get grades, etc. Make and lay your own tile at low cost. Write **FARMERS' CEMENT TILE MACHINE COMPANY** Box 307, St. Johns, Michigan.



HERE is the "SIMPLE" SPEED INDICATOR

Which guarantees a uniform cream test by helping you run your separator properly. Absolutely accurate. Easily attached. Fits all machines. Price \$3.00 postpaid. AGENTS wanted. Circular FREE. Write for special offer. **Simple Speed Indicator Co.** Box 11 Sidney, Ohio

**ILLINI SHOCK ABSORBERS
FOR FORD CARS**

Save tires. Save jolts. Save springs. Price per Set of Four, \$6.50. Retail at \$12.00. Shock Absorbers for Heavy Cars per Set \$15.00. Auto Tires and Oils at wholesale.

WILLIAMS HARDWARE CO.
Dept. 8 Stretcher, Ill.



Sheep Farming Profitable.

IN the past twelve years, during which I have been engaged in farming in Michigan, I have received in cash over \$8,000 for lambs and wool marketed. In view of this cash return and the great value of feeding and marketing the crops on my own farm, which conserves the fertility of the soil, it is plainly seen that sheep may profitably be made a very important factor in Michigan farming. It is safe to say that the cash taken in for this one line of production is "easy money." In other words, it is money earned with as little expense as anything that can be produced on a farm.

I sell the lambs off from grass in late fall with no extra feeding or expense. They have always brought over \$6; this year was the top, \$6.75 per hundred. I winter from 100 to 150 ewes. My lambs and wool this last season figured up to \$1,100, which was the income from about 150 "Black-top" ewes. This type of sheep are profitable from the fact they shear around 10 pounds of good staple wool per head and by crossing with the larger mutton breeds you get a good-sized lamb, in fact, nearly as large as the pure-bred Shrop. Since I have been raising this kind of sheep I have lost but very few ewes and very seldom a lamb, while with the Shropshire breed some seasons I lost as high as a dozen good large ewes. Of course, in small flocks the larger breeds will do much better and the losses will not be so great.

There are not many farms on which there is not some rough land and a good many are nearly all rough and unfit for profitable cultivation. But with the sheep industry there is not a farm that the sun shines on but what most every foot can be utilized at a good profit. When we come to travel east, west, or south, we find ravines and gullies that are absolutely worthless, dotted all over the land, which are not only an eyesore to the country but a "dead loss" to the owner. Once this same land was covered with timber and when this was removed its owner could hardly have patience for the stumps to decay that the plow might rip up a steep hillside in order to plant what is called a "cash crop." It mattered not whether the expense was greater than the returns, these hills must be plowed up in order to make the soil more productive. This seems to be the theory of the average Michigan farmer, which is entirely wrong. The reward has been that many a farm has been practically ruined, washed and gullied and is now unfit for even pasture land. If these same hills had been left as nature made them, with a thick blanket of prolific June grass or bluegrass sod upon them, which would have protected the surface for all time from washing away, and with a nice little drove of sheep kept thereon, how much better it would have been. It is all right to be ambitious and plow, but when we go against common sense and do things that are not profitable or practical, it would be much better to go fishing or be idle.

I have always arranged my fences so as to give the sheep the rough land, or land that is expensive and disadvantageous to work upon, for pasture, and the level soil I utilize for crops. In this way the sheep industry can be made to pay out well, and your whole farm can be made to earn a dividend and the expense bill will not be as high. It costs twice as much to produce any crop on rough land as it does on the level, but your bunch of sheep will farm for the same price and do a good job on those hills.

The time has come when the raising of sheep for mutton and wool is going to be very profitable, from the fact the lands that are worth \$100 and upwards per acre, especially when level

and productive, can not be utilized for pasture at a profit and the number of sheep must be reduced, as well as all kinds of stock, for this reason. Hence the farmer who has a large acreage of "cheap land" can successfully produce sheep at a good profit on his investment.

There is no stock upon the farm that requires as little care through the winter and will do as well on rough feed. I am wintering 185 ewes. Not having any clover hay I am feeding all corn fodder. The corn that is fed is standing in the shock. I draw up about 100 common-sized corn binder bundles, or about two shocks, corn and all, and feed in the morning and at night they are fed in the basement, stalks which I had shredded in the barn. The shock corn I am feeding was planted late and the quality is poor. Also it is not well eared. It takes less than one hour per day to care for this bunch of 185 ewes and they are fat and look fine.

The farmer's most profitable income is from his own production at low cost. But too many do not figure the cost bill. This is where the sheep pay the best profit of any stock. The wool from a good shearer will more than pay the cost of keeping and the \$4 to

\$7 which the lamb brings is profit, and a mighty good one.

I find it very handy when we want a little fresh meat; especially in the warm weather season, to kill a good fat mutton. There is no better, or more wholesome food to be found, when properly dressed and cooked, and if more people, especially farmers, would buy a few aged ewes each season, if they have no sheep, and fatten them up it would cheaply supply a good lot of tender and delicious meat. Such ewes can be bought for three to four cents per pound on foot, while an old tough cow, old enough to vote, will cost five to six cents, and on the butchers' block 10 to 20 cents per pound.

Of course, every farmer has his liking for some certain line of farming or stock raising. But I am simply pointing out a few facts and figures in favor of the sheep industry, especially for those whose capital is limited and who can not invest as much cash as it requires to own herds of cattle or other stock. It would not be wise or profitable for all of us to go into sheep and nothing else, but a few sheep on the small farms to graze upon the hills and rough land, and a hundred or two on the larger farms, will prove profitable and economic to any progressive farmer.

Washtenaw Co. B. F. WASHBURN.

Making and Feeding Charcoal.

EVERY hog raiser knows that to the amount of charcoal that is to some form of mineral matter is important in the ration of the hog, but as it sometimes seems difficult to get this necessary feed it is either neglected or considered so unimportant that it is not provided. Charcoal is a good form of mineral matter and it is not difficult nor expensive to make a large supply at one time. It is one of the most valuable supplements to the hog's ration and it has several important uses.

As a conditioner to keep the entire herd healthy it is excellent. Mineral matter is required in building up and strengthening the bone. There is a considerable amount of it that goes to make and purify the blood, and the condition of the blood has a great deal to do with the power of the hog to withstand disease germs which are always present in large or small numbers, and may at any time become so numerous as to overpower the animal. Charcoal, salt and such foods fed occasionally, and the liberal use of lime and good disinfectants about the hog house will keep down the number of disease germs and allow the hogs to remain healthy and make proper use of the fattening feeds as they should.

Charcoal keeps the hogs from getting what is commonly called "down in the back," a trouble that is more or less common, especially in the winter, and which is said to be due to the lack of mineral matter in the food. Hogs that have been fed corn as the main part of their ration for a number of years will become so weak in their bones that they can hardly stand on their feet. This is a very undesirable thing, especially among breeding hogs. While it is a most desirable thing to have the hogs that are to be fattened, fine in bone, the breeding type should be bordering on the rough and heavy bone type.

If charcoal and other mineral feeds are provided in sufficient quantities, it will do more to stop the pigs from rooting up fine pastures than putting rings in their noses. Mineral matter is required and in order to get it the hogs will root up the sod and search for roots and other feed under the soil.

The first requirement in making charcoal is a kiln. This can easily be made by digging a hole in the ground, any dimension from the size of a barrel to the size of a cistern, according

to the amount of charcoal that is to be made. Some people do not think it is necessary to dig a hole, but instead prefer to bank the fire up with dirt. However, I have found that the former method gives best results and have always used it. In digging the hole it is necessary to keep the entrance at the top small enough to be covered with a door. We have an iron door that covers the hole completely. An iron door can be obtained from nearly any old iron dealer or if one is not at hand a substitute can be made by flattening out a section of a wornout boiler.

Start the fire in the hole and keep adding fuel to keep up a vigorous flame. When the hole is full of the coals and the top material seems to be charred through, place the lid over the fire and cover it with dirt to keep all air from the fire. In a day or so, according to the size of the kiln, the fire will have completely died out and the coals will be ready for feeding.

There are several kinds of wood that are suitable for making charcoal, the best, perhaps, being the common willow. Good charcoal can be made of oak, in fact, no one need be without it because they cannot get the particular kind of wood that is said to make the best grade of charcoal, for it can be made of nearly any kind. Ends of boards or any kind of scrap pieces of well-seasoned wood will serve the purpose. By using such material we can put to profitable use much of the trash that is often allowed to be scattered about the lot and yard and which often spoils the neat appearance of our premises.

Usually wherever hogs are fed there can be seen large piles of corn cobs that litter up the pens and become a nuisance. Nothing makes better charcoal than corn cobs. When burnt they become soft and are easily eaten. If they are saved, allowed to dry, instead of being trampled in the mud, and, when charcoal is made, mixed in with the wood, they can be utilized profitably and the pens can be kept cleaner.

One of the best ways to feed charcoal is to provide a shallow box, place it in an easily accessible part of the hog house where it will be dry, and fill it with the charcoal. The hogs will eat from it when their system demands it and there is no danger of them getting too much to do them any harm.

C. H. WHEATLEY.

FEEDERS' PROBLEMS.

Potatoes for Fattening Hogs.

I have five hogs to feed. At present pork is low in our local market and grain feed is high priced, but I have lots of potatoes worth about ten cents per bushel on the farm at local prices. I want to know if I can feed cooked potatoes with tankage at a profit? How much tankage would it take to balance the ration? Could I do without corn in the ration? The hogs weigh now about 200 to 250 lbs. each. Montmorency Co. H. S. McK.

Under the conditions mentioned in this inquiry potatoes can be very profitably used in connection with other grains in feeding these hogs. In experiments conducted to determine the comparative value of potatoes as a feed for fattening hogs, where cooked potatoes were fed with corn meal at the rate of about three pounds of potatoes to one pound of corn meal, it was found that four and a half bushels equaled one bushel of corn in feeding value. When so fed, by adding say five per cent of tankage to this combination the feeding value would be still further improved and the hogs could be fattened at much less cost than would be the case where fed upon corn alone. It would, however, be impractical to fatten hogs on a ration of cooked potatoes and tankage alone, for the potatoes are too bulky a food to produce maximum gains. It would be better to feed with grains in about the proportions above noted.

LIVE STOCK NEWS.

All the surroundings of the sheep and lamb market are favorable for sheepmen, and no greater mistake can be made by them than to hurry up shipments to market of flocks that are not well matured. It is true that temporarily the market may develop dullness and weakness, and this may happen at any time until the quarantines due to cattle plague are all called off. But ultimately prices are expected to rule higher than ever as a result of the unusually small number of sheep and lambs now held in feeding districts of the United States. Northern Colorado sheepmen are doing a normal amount of feeding, but other parts of the state are feeding far less than usual numbers, and this is true also of such states as Kansas and Nebraska, while Iowa, which state had a million head of western sheep and lambs in its feeding sections a year ago, has less than half that number now. All through the middle west and east, almost universally, sheep and lamb feeding is being carried on sparingly, due to the dearth of feeders at first and to quarantines later interfering with stocking up, and this holds true of cattle as well. Another thing that is sure to strengthen the live mutton industry later on is the expectation of a small lamb crop next spring, due to curtailed holdings of breeding ewes in many parts of the country. The states of Kentucky, Tennessee and Virginia are always depended upon for early supplies of fat spring lambs, but Kentucky has been hit hard by the foot-and-mouth disease.

The Brookwater Duroc Sale, announced in another column of this issue for March 4, will afford Michigan farmers and breeders an unusual opportunity to buy foundation stock of the best quality at sale ring values. It will be remembered that at Prof. Mumford's first Duroc sale, held last summer, the average made for the excellent offerings was very low, quality considered. While a better average is almost certain at this sale, yet values will doubtless be low for the blood that is being offered, especially when it is considered that the sows offered carry their own guarantee and have been wintered at the seller's cost. The offerings are rich in the blood of the best families of the breed and most of the sows and gilts offered are bred to Brookwater Cherry King, Cherry King's Fancy, Cherry King's Rival, etc., while a number of them are sired by Cherry King, Jr., a blood brother to the Royal Grand Champion, Orion Cherry King. There are also two tried sows by Orion Chief, 14 bred gilts by Defender K and nine by Brookwater Cherry King. A few high-class young boars are also included in the offering. Michigan breeders and farmers should keep the bulk of this excellent offering in the state to improve the herds already established and as foundation stock for new herds of the breed.

Get the Full Benefit of War Time Grain Prices

YOU are facing the greatest opportunity American farmers have ever known. Now, if ever, is the time to make your farm produce to its fullest extent. Big crops require large quantities of available plant food. Swift's Fertilizers supply the available plant food, insuring a quick, vigorous growth and early complete maturity. Those who have used Swift's Fertilizers in the past will use more than ever before this year to take full advantage of war prices. If you have never used Swift's Fertilizers, now is the time to begin.

Prize Winners Use Swift's Fertilizers

Blood, Bone and Tankage Always Win.

Men's 5 Acre Contest.

Norris McHenry,
Elizabethtown, Ind.
G. W. Thompson,
Letts, Ind.
Paul Patram,
Columbus, Ind.
David Dunn,
Columbus, Ind.

Average per Acre Shelled Corn

112.13 bus.
Highest in State.
104.22 bus.
100.2 bus.
98.03 bus.



Look for the Red Steer on every sack. It is your guarantee of highest possible quality.

Boys' 1 Acre Contest.

Arnett Rose, Ohio Champion,
Alger, Ohio.
Harold Doster, Mayfield, Ohio
Champion Cuyahoga Co.
Ray Friedersdorf,
Elizabethtown, Ind.
Sherman Magaw,
Edinburg, Ind.
Gordon Reap,
Elizabethtown, Ind.

Yield per Acre Shelled Corn

153.90 bus.
92.6 bus.
128.8 bus.
Highest in State
103.45 bus.
97.45 bus.

Top Dress Your Wheat

The wheat you put in last Fall should be top dressed this Spring. The fertilizer may be drilled or broadcasted. If broadcasted, it should be worked into the soil by harrowing. If you use a drill, lift the disks so the wheat will not be injured. Apply up to the time wheat is 4 inches high. The choice of the right fertilizer is of absolutely vital importance. Swift's Fertilizers drill perfectly. They do not leach away, but become a part of the soil.

Swift's Fertilizers are good drillers—best crop producers. If you can not buy Swift's Fertilizers from your local dealer, write us direct. Place Your Order Now.

Agents Wanted in Unoccupied Territory

Swift & Company — Dept. C U. S. Yards — Chicago, Illinois

Horses & Mules

increase in value when Clipped

Not only in selling price but in working value. You don't go at the spring work with your winter clothes on—then why expect the horse to do so—he feels the warm weather just as much as you do. Clip off his heavy coat that holds the wet sweat and dirt. It will give him new life and energy. He'll rest better, feel better, work better and repay you many times for the little it requires to clip him. Pays also to clip the udders and flanks of your cows—prevents dirt from dropping into the milk. The best and most generally used clipper is the

Stewart Ball Clipping Machine

Insist on having the Stewart, the machine that turns easier, clips faster and closer and stays sharp longer than any other. Gears are all cut from solid steel bar. They are enclosed, protected and run in oil, little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart single tension clipping head. Highest grade. Get one from your dealer or send \$2.00 and we'll ship C. O. D. for balance. Money and transportation charges back if not satisfied.

CHICAGO FLEXIBLE SHAFT CO., 115 N. La Salle St., Chicago, Ill.
Write for complete new catalog of horse clipping and sheep shearing machines. Mailed free.

PRICE \$750

BIG RETURNS FOR LITTLE INVESTMENT

In Star Sweep Feed Grinders. Grind ear corn and small grain at home, with one horse or two. Guaranteed capacity, materials and workmanship. No long drive; no mill tolls. Catalog for a postcard.

STAR MFG. CO.,
11 Depot St., New Lexington, O.

Michigan Livestock Insurance Co.

Capital Stock—\$100,000. Surplus—\$100,000

Home Office—Charlotte, Michigan.

Only Home Co. in Michigan.

COLON C. LILLIE President.
H. J. WELLS, Secretary-Treasurer.

WEAR OVERLAND ALUMINUM SHOES

From Factory to Feet

Save Money and Prevent Sickness

Water-proof. Rust-proof. Rot-proof. Warm in winter, cool in summer. Weight about the same as an all-leather work shoe. Will outwear several pairs of leather, rubber or wood-soled shoes. No metal touches you. Thick felt insole. Comfortable to wear. Keep the feet in good condition. Best by test for all work in any weather.

MONEY BACK if shoes do not meet with your approval. Write for FREE booklet which shows styles, gives prices and tells how to order. A postal brings it.

OVERLAND SHOE CO. Dept. 77 Racine, Wis.

Empire Molasses

Saves grain. Puts fat on stock quicker and cheaper. Write us today for low prices and guarantee.

WATLES & COMPANY, Box 13 Litchfield, Michigan

FARMERS!

Why use cheap inferior unprinted writing paper when you can get 100 note size letter headings and 100 envelopes, good quality, both neatly printed and postpaid to your address for only \$1.00.

WEBB V. WILDMAN, Printer, Tekonsha, Mich

Hayes Four Wheels—Bigger Yields

GOOD seed and good soil is only the starting point in raising a big corn crop. You can no more afford to plant with an old, worn out corn planter or a complicated new one full of fads and fandanglers than you can to plant poor seed.

You can't afford to waste your time and labor or risk your entire crop with a planter that covers unevenly, misses hills or does not check accurately. 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 planting 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 leaving 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. Corn all comes up at the same time, allows earlier cultivation, an earlier harvest, a better quality and bigger quantity.

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. No replanting necessary. Increased yields soon pay for it.

Thousands in use for years with practically no repair expense and every one giving time-saving, money-making service. No complicated parts to get out of fix. Strong construction, practically exempt from breakage. No expensive and aggravating delays in the busy planting season. Easy and simple to operate and can be trusted to unskilled help.

Think these things over and start investigating NOW. Learn the overwhelming advantages in Hayes Four-Wheel construction. Ask any Hayes user.

Learn the experience of farmers who have increased their yields by big margins with the use of the Hayes—who have finished planting earlier—who have begun cultivation earlier. Every Hayes user will tell you the work is easier—faster—better; the results more satisfactory—more profitable. So much depends on the work of the planter that a farmer cannot afford to get anything less than the best service.

Can be furnished with perfect working Fertilizer or Cow Pea Attachments, Stub Runners or Disks.

WRITE! This planter is guaranteed. It must be all we claim and all you expect. Send for Free Book "AC" of Valuable Planting Facts. Write today, then you won't forget.

HAYES PUMP & PLANTER COMPANY, GALVA, ILL.



POTATOES

How did Maine increase its average potato yield 75.8 bushels per acre? By proper seed selection, thorough tillage and the use of suitable plantfood.

Our Special Potato Bulletin tells how a Wisconsin farmer raised 470 bushels per acre.

Write for this free literature.

The Middle West Soil Improvement Committee
of the National Fertilizer Association
918 Postal Telegraph Bldg.
CHICAGO



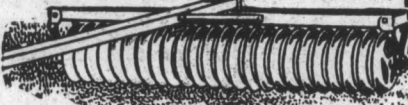
that's the most fitting name for a scale. It registers the value of your hay, grain or livestock. Shows if you get your money's worth of what you buy. Get the easily built, accurate

Allen Pitless Steel Scale

Guaranteed for ten years. Works without friction. Absolutely accurate according to U. S. Standard.

Allen Improved Land Rollers

We guarantee satisfaction or money is refunded. Catalog Free. Allen Pitless Scale Co., Box 40 New Castle, Ind.



IRON AGE

It's easy to garden with Iron Age tools.

WHEEL HOES AND DRILLS mean a big variety of fine vegetables, with drudgery - stooping, hoeing and hand-weeding cut out.

In one operation the tool shown below will open its own furrow, sow in continuous rows or drop in hills, cover the seed with loose soil, pack it with roller, and mark the next row. A boy can do it. A three minutes' chance and you have a wheel hoe cultivator that can't be beaten. 35 combinations at \$2.50 to \$12.00. Straight planting; clean, close, safe cultivation. Ask your dealer to show them.

Write us today for free booklet "Gardening With Modern Tools."

BATEMAN MFG CO.
Box 2412
Greenville, N. J.

STOP WASTE LABOR

Don't waste labor by lifting a load into a wagon bed 4 feet from the ground. Lift only 2 feet by equipping with low-

EMPIRE STEEL WHEELS

Far stronger than wooden wheels. Cannot rot or bow. NO BREAK-DOWNS. No repair bills. Life savers for horses hauling over muddy roads and soft stubble fields. Satisfaction fully guaranteed or money back quick. Write today for 30-Day No Risk Trial Offer.

EMPIRE MANUFACTURING CO.
Box 689
QUINCY, ILL.

MAPLE SYRUP MAKERS

The Grimm Evaporator

used by principal maple syrup makers everywhere. Saving of time and fuel alone will pay for the outfit. Write for catalogue and state number of trees you tap.

GRIMM MANUFACTURING CO.
169-621 Champlain Ave., N. W. Cleveland, Ohio

"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.

A. J. PLATT, MFR.
BOX J STERLING, ILL.

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

Farm Commerce.

Spread of Co-operation in Hillsdale Co.

NO movement of recent years, perhaps no movement in the history of this section, has spread with such amazing rapidity as has the co-operative idea during the last few months. Genuine co-operative methods began first, in the county, in the case of certain rural telephone organizations. In many cases these organizations were somewhat crude and unwieldy, but they furnished the first step, and taught the farmers they could co-operate for the purpose of doing business. The first real business enterprise for the purpose of bringing better profits to the producer, took shape in the form of a co-operative creamery which was established at Litchfield. This creamery has been from the beginning, remarkably satisfactory and successful, and to its success is due, without a doubt, later steps in co-operation. Less than two years ago, Litchfield, the home of the successful co-operative creamery, organized a co-operative shipping association, the first organization of its kind in this section of Michigan. As with the creamery, so with the shipping association, success crowned its efforts from the beginning. From this center of the co-operative enterprise the movement has spread during the past few months, throughout the entire county and into the adjacent portions of Branch county.

Leavening the Whole Lump.

Since this article deals primarily with co-operation among the farmers of Hillsdale county, other communities will be given only a passing mention, to assist in illustrating the hold which the co-operative idea has taken on the farmers of this section. The association at Quincy dealt with by the writer in a recent article in these columns, got its inspiration and ideas from Litchfield. This Quincy association has enjoyed during its brief existence an extraordinary degree of success, and an unusually rapid growth, and now numbers about 275 members. The success at Quincy started the ball rolling at Coldwater, where a large association is now doing business.

Returning to Hillsdale county, we find that at the rate the idea is spreading, every township will have an organization, or an interest in one, before grass grows again. At Camden a strong co-operative association has been doing a successful business for months, and helping to spread the movement to neighboring localities. Cambria and Montgomery are well and successfully organized, and the farmers who constitute the membership of this association are well pleased with results so far. At a large meeting in the city hall of Hillsdale city recently, the first steps were taken toward the forming of a co-operative association. This association is now permanently

established, and nearly ready to begin the shipping of farm produce. At Reading, initial steps have been taken and a permanent organization is assured. The same is true at Jonesville and Allen, where meetings have been held and the soliciting of shares of stock is well under way.

The Objects of Organization.

In all the co-operative associations established so far, in this section, the shipping of live stock and other farm produce is one of the primary objects. So successful and satisfactory have the associations proved in this line, that local stock buyers have been put out of business. Farmers have been amazed at the profits which they find from experience, must often have gone into the pockets of these local stock buyers. Everywhere the cry is to bring the producer and consumer closer together, and these shipping associations are eliminating the local stock buyer who has for years made a good living and in many cases, amassed a fortune at the expense of the producers. As one farmer said, "The stock buyers are not to blame, they have taken advantage of the opportunity, but the farmers are to blame for permitting it." Farmers have found that stock buyers reaped their biggest harvest from rough stuff. One farmer who is a member of a shipping association sold five old ewes recently which netted him five cents in Buffalo. At the most, he could have got but two and one-half cents had he sold to local buyers. This instance is an illustration in point. What was true in the case of the ewes, has been shown over and over again, to be true

in the case of old cows and rough stuff of all kinds. An astonishingly large saving to farmers has also been realized in the case of veal calves. On all stock, however, from the best to the poorest, these co-operative shipping associations are realizing at each shipment better money than could possibly be obtained from local buyers. The elimination of this middleman, with his profits, gives the producer a more just share in the fruits of his labor.

Sees a Large Future.

It is the realization of this fact which is at the bottom of the rapid spread of the co-operative idea. What is now being done in the line of the shipment of live stock will doubtless be done soon, along other lines. The erection of grain elevators and shipment of grain, the establishment of creameries, kraut factories, warehouses and stores, are some of the things talked about in various quarters. Already a co-operative store has been assured at Litchfield. In many instances, also, coal, mill-feed, and other commodities are being handled by the associations, with a marked saving to the farmers.

The above brief sketch of the growth and spread of the co-operative idea in this section, will give the reader a general idea of its importance and significance. Without doubt, it is the most significant and far-reaching movement of recent years. It promises to revolutionize the business methods of the small towns and of the farming districts. It is as important in its field as the rural mail service and rural telephone are in theirs. It is a step in the right direction, solving as it does, a portion of the great problem of bringing the producer and the consumer closer together. Could some arrangement be made by which the consumer at the other end of the line could eliminate another middleman, another step in the solution of a grave problem would be taken.

Hillsdale Co. J. A. KAISER.

Cost of Auto-Truck Delivery.

EVERY reader is anxious to know what it is costing the users of motor trucks for the service secured from these vehicles. By reason of this we are pleased to publish the figures furnished us by Mr. Charles Bingham, of Oakland county, who is using a one and a half ton truck to deliver produce upon the Detroit market. The distance from his farm to the eastern market is 21 miles.

During the peach harvest last fall Mr. Bingham had 1,100 bushels of peaches that he marketed in 13 days with the motor truck. He did all of the driving and selling except for the help of a boy on the market. Allowing himself a wage of \$4.00 per day his actual expenses itemized are as follows:

Actual Truck Expenses.	
100 gals. gasoline at 13c.....	\$13.00
10 gals. oil at 28c.....	2.80
Other grease	2.00
13 days' work at \$4.00.....	52.00
Total expense	\$69.80

These figures do not include any allowance for depreciation, tire wear, or repairs. They are the actual expenses incurred in moving this particular crop of fruit.

Now, if it had been necessary to move this same fruit in the 13 days required to do it with the motor truck with teams, the expenses would have been greater. Two teams would have been busy every day for the full 13 days and it would have necessitated the hiring of five extra loads drawn besides. Furthermore, Mr. Bingham would have been kept on the market constantly if he wished to do the selling. The actual expenses that would have been incurred by team-hauling, based upon many years' experience, are as follows:

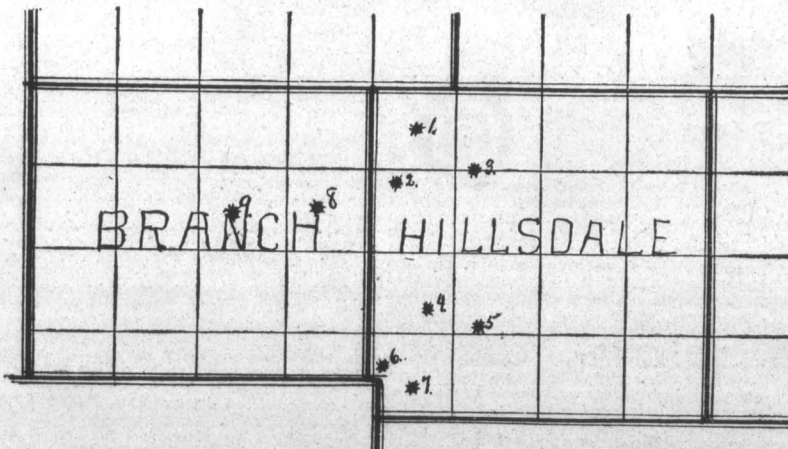
Expenses for Team Hauling.	
Two teamsters at \$2 per day....	\$52.00
Teams in barn at market.....	12.00
Meals for teamsters.....	13.00
Five extra loads at \$10 per load	50.00

Total expense **\$127.00**

This expense account does not include an allowance for Mr. Bingham's time, at the market. The extra loads were charged at \$10 per load which covers all expenses of those hiring to do this work, including meal and stable charges. Nor does this list allow for depreciation of horses and wagons, shoeing bills, nor cost of grain for horses. These items would about offset the depreciation of car and tire wear.

As the accounts stand, we observe a difference in favor of the motor car of \$57.20 for the 13 days' work, or a daily saving of \$4.40.

In commenting upon the work he was able to do with this truck, Mr. Bingham states that the daily saving of \$4.40 in actual expenses does not measure all the benefit. Besides tak-



1, Litchfield; 2, Allen; 3, Jonesville; 4, Reading; 5, Cambria; 6, Montgomery; 7, Camden; 8, Quincy; 9, Coldwater.
Map Showing Proximity of Co-operative Organizations in Hillsdale and Branch Counties.

ing the place of two men and two teams, he was able to do his own selling and spend a few hours at home each afternoon to look after the harvesting and keep things about the farm in shape. Furthermore, the fruit arrived in much better condition than if it had been delivered on horse-drawn vehicles. By reason of this he was able to get a better price. With the truck Monday's picking could be on the market Tuesday morning, while with the teams much of the day's harvest would not get to the market before Wednesday morning. In selling perishable products this dispatch means a real advantage to the grower in that a higher basis of prices can be maintained with such prompt delivery. Mr. Bingham is satisfied that his investment in the motor truck was a good one. And there are others whose experiences we shall mention later.

THE 1914 APPLE CROP.

The largest apple crop ever produced in the United States, that for 1914, yielded 259,000,000 bushels, according to estimates announced by the Department of Agriculture. This yield was 114,000,000 bushels more than was produced in 1913. These figures represent the actual "agricultural yield" the department explained, and should not be confused with those of the commercial crop, which comprise the marketed portion of the total production. In 1913 the commercial crop was estimated at 40 per cent of the agricultural production. Using the same proportion for the 1914 basis, the 1914 commercial crop would total 103,600,000 bushels.

The states leading in production of apples in 1914 were: New York, 49,600,000 bushels; Pennsylvania, 23,100,000; Michigan, 17,200,000; Virginia, 15,300,000; Kentucky, 14,700,000; Ohio, 13,300,000; Missouri, 12,500,000; West Virginia, 12,400,000; North Carolina, 9,000,000; Tennessee, 8,600,000; Washington, 8,300,000.

Crop and Market Notes.

Michigan.

Kalkaska Co., Feb. 15.—Fields are still nicely covered with snow. Stock of all kinds in a healthy condition. Rough feed is plentiful, but grain is in limited supply. The acreage of potatoes will be reduced this year on account of low prices, and more corn, oats and beans will be put in. Not many eggs being produced. Dealers are paying five cents above Elgin prices for sweet cream.

Gratiot Co., Feb. 17.—We have had good sleighing, but the recent rains and mild weather removed most of the snow, so the fields are bare while many acres of wheat are flooded. The roads are good, though icy. Live stock is plentiful and wintering well, as farmers have plenty of feed. As a result of beans being marketed quite freely, the price took a decline, the highest paid now being \$2.90. Quantities of hay are being baled, most of which is being held for higher prices.

Washtenaw Co., Feb. 15.—The snow and ice which has covered the fields for the past few weeks has almost entirely disappeared, and wheat, rye and meadows appear in the green of early fall, and apparently in fine condition. Stock has wintered in good shape, and there seems to be an abundance of feed. A good deal of hay has been baled and shipped at \$12 per ton. Hogs were shipped in large numbers, and the market was disappointing to feeders, as on account of the high price of all grain, the hogs were fed at a loss in many instances. Some wheat and oats are being marketed at \$1.50 and 60 cents respectively. The local creamery reports an average of 26½ cents per pound for butter-fat for the year.

New York.

Niagara Co., Feb. 16.—There was about one foot of snow until a few days ago, and at present there is neither good sleighing nor good wheeling. Crops are in good condition. Most of the farmers are keeping their feed for home use, as most of the surplus was sold early. Wheat \$1.50; beans \$2.75@3.50; cabbage \$6 @7.

New Jersey.

Morris Co., Feb. 15.—We have had very little snow, sleighing lasted only a few days. Roads have been good

until recently, but the milder weather and rains have made them muddy. Wheat and rye are not looking very good now. The usual amount of live stock is kept and is looking fairly good. Hay \$20; eggs 26c; butter 38c; rye \$1.25.

Pennsylvania.

Lancaster Co., Feb. 15.—No snow here, and we have had none all winter. Wheat is not very good on account of lack of snow; grass in meadows also poor. No rye raised here. Live stock in good condition. Quarantine still in effect, although no new cases of foot-and-mouth disease lately. Roads are in very bad condition; frost is coming out and we are having many rains. Wheat is very high but most farmers have sold. Hens laying well; eggs 23c; butter 35c. Farmers are hauling out tobacco.

Ohio.

Crawford Co., Feb. 15.—We had much snow and good sleighing during January, but the snow is now gone and roads are very bad, being almost impassable with loads. Wheat fields and meadows look excellent; no rye was sown. Stock is all doing well, and most farmers have plenty of rough feed, though some will run short if spring is late. Not much fat stock for sale. A large amount of wheat moved to market while the roads were good, but one-third of the wheat crop is still on hand. The egg production is increasing. Wheat \$1.48; oats 54c; corn 77c; hogs \$6.50; lambs \$7; eggs 22c; butter-fat 33c.

Wayne Co., Feb. 15.—Fine open weather, snow and ice all gone, and if fine weather continues plowing will soon begin. Roads are very bad, being almost impassable. Wheat, rye and meadows are in good condition. Stock of all kinds is in good condition; very few cattle for sale; many bunches of hogs are ready for market, but owing to the quarantine of the stock yards, no sales can be made. Farmers have plenty of roughage, but many farmers, especially dairymen, are short of grain. Public sales are numerous, and everything sells well. Many holdings of wheat were marketed recently, the highest price reached being \$1.55. Oats 55c; corn 70c; cattle \$6; butter-fat 31c. Eggs more plentiful at 24c.

Florida.

Duval Co., Feb. 15.—The weather is very cool, and all garden truck is more backward than usual. There have been excessive rains and roads are bad. A large packing plant is being erected in a nearby city so as to try and keep the southern cattle instead of shipping live stock further north.

St. John Co., Feb. 15.—The season has been wet and cool. Potatoes look fine, and there is every indication of a large crop. Tomatoes fair; beans are fair; strawberries are doing fine. This county is putting brick on its main highway, which will some day help to form the Lincoln Highway. There are a great many homeseekers from the north. Land sells for \$50 per acre, with no improvements.

Volusia Co., Feb. 15.—A drouth last July is affecting orange and grape fruit, which it is said will be only half a crop. Peas, tomatoes and beans are further advanced than in the above two counties. They have had too much rain here, and it is very cool, with (Continued on page 272).

A RAZOR SNAP.

A new lot of Imported German Razors at 50 cents while the supply lasts, is now offered by the Michigan Farmer.

The razors are made of the best German steel, five-eighth inch blade, and black handle. We will not say just what these razors ordinarily retail at, as prices on razors vary with each dealer, but we have seen razors no better sold at \$1.25 and \$1.50.

Every man who shaves ought to have at least three razors as it is a proven fact that giving a razor a rest is beneficial to it, and here is your opportunity to get a supply at very little cost.

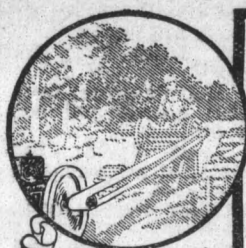
So, only while our present supply lasts the price is 50 cents each, postpaid, or a half-dozen at \$2.00, postpaid.

A Strop Bargain, Too.

We also have a new lot of Presto All-in-One razor strops that dealers sold at \$1.00 each. These strops are made of finest horsehide leather and one side is treated with All-in-One solution which makes it possible to put a hair-splitting edge on the dull-est razor. It combines the strop and hone in one.

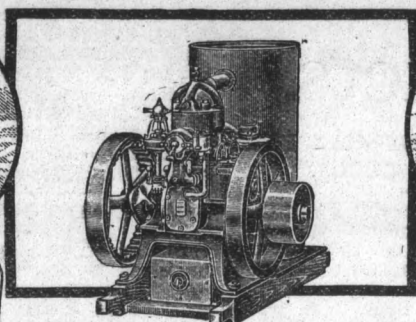
The special price on the strop alone, while the supply lasts, will be 50 cents, postpaid, but if ordered together with one of the above razors the price of both will be only 75 cents postpaid, or \$1.25 with the Michigan Farmer one year; \$1.60 for three years and \$2.50 for five years.

This would make a nice present, worth double the cost.



Wood Sawing

At a fuel cost of less than 1 cent you can cut a cord of stove wood from hardwood poles.



What 1 Cent Will Do

Yes, one lone cent! Spent wisely, it is unbelievable what you can accomplish with this small amount. And by spending wisely we mean as fuel for an Ellis Engine. Read carefully every item. These are facts—proven by thousands of enthusiastic users.



Pumping

2000 gallons of water can be pumped from a 30-foot well for 1 cent. Or you can flood an acre of land 2 in. deep for 15 cents worth of kerosene.



Grinding Grain

On 1 cent's worth of kerosene you can grind 5 bushels of grain into feed for horses, cattle and hogs.



Cream Separating

You can run a medium sized cream separator for half an hour for only 1 cent's worth of fuel.

Ellis Engines

are made in vertical and horizontal types, from 1½ H. P. to 18 H. P. Strongest, simplest, most powerful engines made—only three working parts. No cranking, no excessive weight, no carbonizing, less vibration, easy to operate.

Ellis Engines develop more power on kerosene than some engines do on gasoline. Sent on 30 days free trial and guaranteed for 10 years.

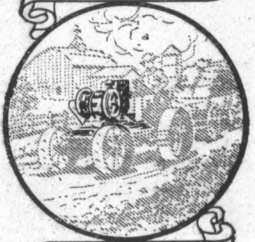
Our booklet, "Engine Facts," descriptive of Ellis Engines and their many uses, sent free. Write for it.

ELLIS ENGINE COMPANY
2839 E. Grand Boulevard, Detroit, Mich.



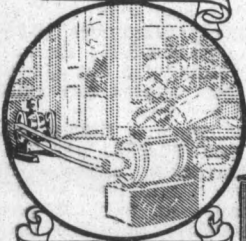
Electric Lighting

You can run 10 electric lights of 16-candle power each for one hour at a fuel cost of 1 cent.



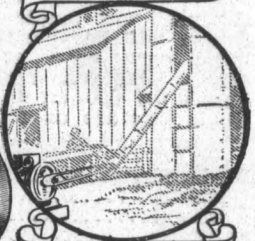
Tractors

With a two-cylinder Ellis Engine mounted on a suitable tractor frame you can plow an acre of land for 14 cents.



Butter Churning

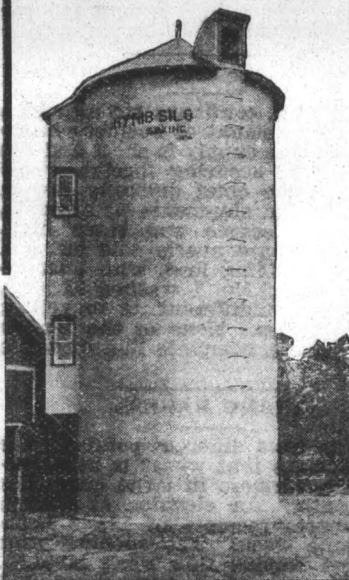
With 1 cent's worth of fuel you can run a butter churn for ½ hour sufficient to make 100 lbs. of butter.



Silo Filling

You can fill silo with blower at a fuel cost of less than 1 cent for each ton.

PERMANENT SILOS OF HY-RIB CONCRETE



are low in cost, easily built by ordinary labor and have given general satisfaction everywhere. Built without forms, they require only the usual scaffolding and the ordinary farm labor. Walls are absolutely water-proof and are not injured by silage juices. Fire-proof, storm-proof and rat-proof. Nothing to rot or wear out. Need no painting or repairs.

For farm buildings of every kind, Hy-Rib construction is simple, economical, permanent and fire-proof. Hy-Rib combines within itself re-inforcement, forms, lath and studs.

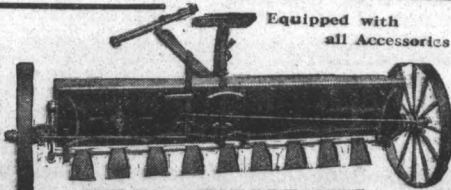
SILO CATALOG FREE

containing useful information, illustrations, testimonials, etc., also examples of farm buildings. Tell us what you plan to build and receive this valuable book free, postpaid. Agents Wanted.

TRUSSED CONCRETE STEEL CO.
688 Trussed Concrete Building, Detroit, Mich.

THE GUARANTEE

Lime and Fertilizer Spreader
The Spreader that Spreads Evenly under all conditions
THE GUARANTEE SPREADER has shifting clutch that can be thrown in and out of gear. Regulations can be made from seat. Accurate acre mark, indicator, screen and lid.
Write for LOW PRICE and Catalog B.
The Guarantee Mfg. Co., Baltimore Md.



WE PAY THE FREIGHT.

When Writing to advertisers please state that you saw their ad. in The Michigan Farmer.

Markets.

GRAINS AND SEEDS.

February 23, 1915.

Wheat.—Notwithstanding the fact that the possibility of the government's placing an embargo upon food-stuffs to secure its supply, seems far more remote than a week ago, prices have suddenly declined. The reason ascribed for the weakening is the increased difficulty of getting wheat to Europe by reason of the blockades announced by Germany and the Allies. The position of the market is such that a little uncertainty causes holders to let go of their stocks and thus send prices downward. On the other hand, confidence quite as quickly restores the quotations. Primary receipts Monday were less than for the corresponding day of last year. Wheat is leaving this country at about the rate of one million bushels per day, and our visible supply is less than a year ago. Weather conditions are reported to be damaging the crop in several central states. No. 2 red wheat sold on the local market a year ago at 99c. Quotations are as follows:

	No. 2	No. 1	May
Wednesday	1.58½	1.55½	1.61½
Thursday	1.59	1.56	1.62½
Friday	1.60	1.57	1.63½
Saturday	1.58½	1.55½	1.62
Monday	1.53½	1.48½	1.57
Tuesday	1.53½	1.48½	1.57

Chicago, (Feb. 23).—May wheat is quoted at \$1.52; July \$1.25½ per bu.

Corn.—Corn values have suffered with those of wheat. The visible supply of this grain in this country at the present time is about two and a half times what it was one year ago. Primary receipts have been large and but for unusual demand from Europe the market would undoubtedly be weak. Foreign buying, however, has held values up. It is expected that if events continue as they have been for the past few months, the American farmer will be able to dispose of his large corn crop at unprecedented prices. One year ago No. 3 corn was quoted at 62c on the local market. Quotations are as follows:

	No. 3	No. 3	May
Wednesday	75½	76½	76½
Thursday	75	76	76
Friday	75	76	76
Saturday	74	75	75
Monday	73	74	74
Tuesday	73	74	74

Chicago, (Feb. 23).—May corn 73.6c; July 75.6c per bu.

Oats.—Values are lower, the decline in wheat being the chief cause for the weaker tone of trade. The visible supply remains about steady with the stocks of oats about a third greater than they were in 1914. One year ago standard oats were quoted at 41¼c. Quotations are as follows:

	Standard.	White.	No. 3
Wednesday	59	58½	58½
Thursday	59	58½	58½
Friday	60	59½	59½
Saturday	58½	58	58
Monday	58½	58	58
Tuesday	58½	58	58

Chicago, (Feb. 23).—May oats 56.2c per bu; July 53.2c.

Rye.—There is a great deal of business done in this department of the market because of the shortage of supplies. No. 2 spot is quoted at \$1.25 per bushel, which is 3c below last week's price.

Beans.—Transactions are limited and quotations higher. Detroit quotations are: Immediate, prompt and February shipment \$3.05; May \$3.25. Chicago prices strong and unchanged. Stocks are small. Pea beans, hand-picked, choice, quoted at \$3.40@3.50; common at \$3.15@3.25; red kidneys, choice at \$3.25@3.50; at Greenville beans are quoted at \$2.75.

Clover Seed.—Market is easy and lower. Prime spot \$9 per bu; March \$9; prime alsike \$9.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$7.90; seconds \$7.50; straight \$7.40; spring patent \$8.10; rye flour \$7.20 per barrel.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$28; standard middlings \$28; fine middlings \$32; coarse corn meal \$32; corn and oat chop \$29 per ton.

Hay.—Quotations are steady. Car-lots on track at Detroit are: New, No. 1 timothy \$16@16.50; standard \$15@15.50; No. 2, \$14.50@15; No. 1 clover and mixed \$13@13.50.

Chicago.—Market steady and de-

mand good. Choice timothy \$17@18; No. 1, \$15@16; No. 2, \$13.50@14. New York.—Quiet. Prime \$22; No. 1, \$21; No. 2, \$19@20. Straw.—Steady. Detroit prices are: Rye straw \$8.50@9; wheat and oat straw \$7.50@8 per ton. Chicago.—Rye straw \$7@8; oat straw \$6.50@7; wheat straw \$6.50@7.

DAIRY AND POULTRY PRODUCTS.

Butter.—The supply is ample and business is active at a decline of 1c per pound. Extra creamery 29c; firsts 27c; dairy 21c; packing stock 19c per pound.

Chicago.—Conditions are about the same as last week and prices remain unchanged. Extra creamery 29½c; extra firsts 28½@29c; firsts 26@27c; seconds 24@25c; packing stock 18½c.

Elgin.—The price for the week, based on the majority of the sales, is 30c per pound.

Poultry.—Offerings are light and the trade firm. Heavy hens in demand. Live.—Springers 15@15½c; hens 12@15c; ducks 15@16c; geese 12@13c; turkeys 20c.

Chicago.—A fair demand and light receipts keep trading firm. Turkeys 13c; fowls 11@14½c; springs 14½c; ducks 16c; geese 10@11c.

Eggs.—Quotations advanced 1c. Supplies increasing but demand is good. Fresh stock sells at 25c per dozen; current receipts 24c.

Chicago.—Heavy receipts have weakened the market and quotations are 1c lower. Miscellaneous lots, cases included 20@23c; ordinary firsts 22c; firsts 23c.

Veal.—Quoted steady at 13½@14c for fancy, and 12@13c for common.

Pork.—Market is steady for dressed hogs, light weights selling at \$7@7.50 per cwt; heavy \$6@6.50.

FRUITS AND VEETABLES.

Apples.—Market is active and well supplied. Baldwins \$2.25@2.50 per bbl; Greenings \$2.75@3; Spy \$2.75@3; Steele Red \$3.50@3.75; No. 2, 40@50c per bushel.

Chicago.—The market shows little improvement; stock is moving slowly. The prices as here quoted are for refrigerator stock. Baldwins \$2.25@2.50; Kings \$2.75@3; Wagener's \$2.25@2.50; Jonathans \$3.25@3.75; Greenings \$2.50@2.75; Northern Spy \$2.50@3.50; Western box apples are selling for 90c@2.25 per box.

Potatoes.—Offerings are liberal at lower prices. Carlots 30@33c per bu; At Chicago the market is easier with prices a shade lower. Michigan white, in bulk, are quoted at 38@43c per bushel. At Greenville potatoes are quoted at 25c.

DETROIT EASTERN MARKET.

While stormy weather held buyers away from the market Tuesday morning, there was a large number of farmers present, and produce was offered liberally. Notwithstanding this, prices held fairly steady. Apple values ruled from 40@90c, depending upon variety and quality. Potatoes 40c; cabbage 40c; onions 80c; pork 9c; loose hay was selling around \$19 per ton.

WOOL.

This market continues strong and a satisfactory amount of business is being done. The supply is short and the possibility of securing foreign wools is small. The chief difficulty lies in getting foreign shipments to America, boats being scarce and rates high. Fleece wools are nearly sold out and prices are holding firm, with quarter-bloods at 35c; No. 1 washed 31@32c, with dealers indifferent as to selling at these prices. None of the Boston houses have a complete line of wools to offer.

GRAND RAPIDS.

Reports from different points in the state indicate that wheat is being unloaded by farmers in large quantities this month. An elevator at Carson City reports receipts of 18,000 bushels in one week. The opening price in Grand Rapids this week is \$1.50. Seed time is fast approaching and dealers are quoting the following prices: Timothy \$4; alfalfa \$12; alsike, medium and mammoth clover \$10.50@11; sweet clover \$17; Canada field peas \$2.75. Poultry is higher, with live fowls worth 12@13c.

THE LIVE STOCK MARKETS.

Chicago.

February 22, 1915.
Cattle. Hogs. Sheep.
Receipts today..12,000 38,000 8,000
Same day 1914..22,832 42,558 32,610
Last week.....38,322 219,285 52,441
Same wk 1914..52,177 149,261 124,375

Shipments from here last week were only 7,336 cattle, 24,445 hogs and 5,280 sheep, comparing with 22,878 cattle, light frost a few days ago, but no

55,183 hogs and 39,487 sheep the same week last year.

Washington's birthday is observed as a holiday by the killing forces in the stock yards territory, and no slaughtering is going on today, but the small receipts of cattle make a better market for desirable offerings, and prices are 10@20c higher, with prime heavy beefs at \$8.70 and part of a carload at \$8.75. Hogs are 5c higher, with hogs taken at \$6.25@6.65 and prime strong-weight pigs at \$6.70. Hogs received last week averaged 226 lbs. Sheep and lambs are higher, with a carload of prime lambs sold to a city butcher at \$9 and packers paying up to \$8.85.

Cattle sold at the beginning of last week at the lowest prices yet reached since the first outbreak of foot-and-mouth disease in this country, the Monday receipts footing up 21,880 head, but later in the week the early decline was followed by sharp advances, with much smaller supplies. One drawback at the present time is that everything is beef, as no stockers and feeders can be shipped from here, and this makes thin steers sell at extremely low prices. Last week steers sold down to \$4.90@5.90 for the poorer lots of thin, light-weights, while the choicer heavy steers brought \$8@8.50 by Thursday, with \$8.15 the Monday top. The bulk of the steers sold during the week at \$6.25@8, with very good lots selling early around \$7.50 and a medium class going at \$6.75 and over. Butchering cows and heifers had an outlet at \$4.65@7.85, the best cows going around \$6.65, and yearling steers of desirable quality were purchased at \$7.50@8.40. Cutters went at \$4.20@4.60, canners at \$3@4.15 and bulls at \$4.25@6.60. Calves were disposed of at a range of \$5@11, light vealers selling briskly. The low prices paid of late for finished beef cattle have been a sad disappointment to stockmen, many of whom have sold their stock for much below first cost as feeders. Some stockmen are waiting for better markets before selling and others are sending their holdings to other markets less hampered than this, but everywhere trade conditions are seriously injured because of the quarantines, few markets being left open. When rallies in prices take place, it is apt to be confined to desirable offerings, as was the case last week, and no permanent betterment of trade can be expected until the cattle plague is stamped out all through the United States. It seems advisable for stockmen to stop marketing half fat cattle and steers of the stocker and feeder class.

Hogs have continued to be marketed with great liberality here and elsewhere, last week opening with Monday receipts here aggregating 53,748 head, and, naturally, prices suffered further marked declines all along the line, with sales at the lowest figures recorded this year. On round numbers about a million more hogs have been received in 11 markets this year than for the corresponding period last year, and packing operations have shown corresponding gains, resulting in heavy accumulations of provisions, while an immense quantity of fresh pork has been consumed. Blockades are standing in the way of exports of hog meats and lard, and the foreign shipments may be expected to continue limited as long as the war lasts. With hogs selling lower than at any previous time since March, 1913, and corn bringing unusually high prices, owners of hogs are a good deal disappointed, and free marketing promises to continue. Most of the time shipments of hogs from here are meager, and local packers exercise undue influence in making prices. At the close of the week hogs brought \$6.20@6.65, comparing with \$6.55@7 a week earlier, light hogs going at the top and pigs purchased at \$4.75@6.70.

Sheep and lambs continue to fluctuate a good deal in prices, with trade greatly disturbed by the absence of a normal shipping outlet, leaving local packers and smaller butchers in a position to hold the market down. Occasionally a sale is made at an exceptionally high price, and the other day a bunch of 228 fancy western wethers that averaged 120 lbs. brought \$7.40 per 100 lbs., the highest price paid since 1913. Lambs comprised the bulk of the receipts last week, and sheep were comparatively scarce. Most of the receipts reaching nearby points are being held for shearing on account of the advance in wool, but packers threaten to make this practice unprofitable by fixing a \$1.50 discount on sheep and lambs without the wool. The week closed with lambs selling at \$6.50@8.75, or about the same as a week earlier, heavy lambs fetching \$7.75@8.65. Sheep were much higher, yearlings selling at \$7@8, wethers at \$6.25@7.25, ewes at \$4.50@7 and bucks at \$4.50@5.75.

(Continued from page 271).

light frost a few days ago, but no

damage done. Roads are very bad. A great deal of land is changing hands, mostly for winter homes.

Nebraska.

Scotts Bluff, Feb. 12.—February began with a storm, followed by a warm wave and all the snow has gone, and the weather is mild. Farmers have plenty of hay but little grain. Corn is being shipped in at about \$1.50 per cwt. There are not many hogs to ship out. Sheep feeders are shipping quite freely. Stock cattle doing fairly well. A large sugar factory in this county has just put in the longest run since it was built, running night and day. Contracts are being let for a larger acreage than ever before. Butter 20c; eggs 20c; butter-fat 26c; hogs \$5.50.

Hastings, Mich., Feb. 23rd, 1915.

NOTICE.

TO THE MEMBERS AND POLICY HOLDERS OF THE MICHIGAN MUTUAL TORNADO, CYCLONE & WINDSTORM INSURANCE COMPANY, OF HASTINGS, MICHIGAN.

Notice is hereby given that there will be a special meeting of the members of said company held at City Hall, in the City of Hastings, Michigan, on the 30th day of March, A. D. 1915, at 1 o'clock, P. M., for the purpose of voting upon a resolution to extend the corporate existence of said company for a period of thirty years from the 7th day of April, A. D. 1915, and if said corporate existence is extended, then also for the purpose of passing upon proposed amendments to the Articles of Association of said company. By order of Board of Directors. D. W. ROGERS, Sec.

SEED OATS Regenerated Swedish Select.
SEED POTATOES—Green Mountain and Late Potatoes or Rural Russets.
Write for sample and Prices.
COLON C. LILLIE, Coopersville, Michigan.

Farms and Farm Lands For Sale

116 Acre Farm—One of the finest in Wayne County, near town, on good road, E. N. PASSAGE, Plymouth, Michigan.

FOR A LIST of the best farm bargains in the best county in the state. Address, KETCHUM & MORSE, Edmore, Michigan.

For Trade, for good Southern Michigan farm land, 42 acres in southern New Mexico under irrigation, and government dam, mostly alfalfa. J. C. Francis, Argos, Ind.

76 ACRES—Near Lansing, Mich. Buildings, wire fences, tile drains, clay soil, 2a. orchard, all of the best; close to market. E. Belden, Dimondale, Mich.

WANTED—Furnished farm by month or year. Two boys 18 and 15 all farmers. Reference given. E. J. ROWLEY, Greenville, Michigan.

SACRIFICE. 79 acres improved Michigan Dairy farm, good soil, buildings, well, windmill and silo. No good real markets. "Owner", Myron Tremper, Birch Run, Michigan.

FINE Stock Farm, with or without equipment, stock, crops. Near Houston, Texas. Sunny south. \$9000 complete. Sacrifice sale. Postmaster, Eastgate, Texas.

Improved Farms—¾ mile country seat 21,000. Twenty cent fare Detroit. 500,000 people. 240 bu. potatoes, 85 bu. corn per acre. \$30 to \$75 per acre. Be quick. E. F. WINEMILLER, Pontiac, Mich.

80 Acres play loam soil, plenty of water, fair buildings two miles from town, young bearing orchard and grapevines. For particulars write or call on. B. KOENDERS, Ruth, Huron Co., Mich.

MICHIGAN FARMING LANDS

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

130 ACRES \$5000, \$2000 cash, balance on easy terms. House 7 rooms, 3 barns, good orchard, plenty water, black sandy soil, 2 miles from town. Write J. B. Rice & Co., for farm list, Cortland, O. or Warren, O.

BARRY COUNTY FARMS—The most profitable section in the State. We have real bargains. Write for list A. BENHAM & TRIM, Hastings, Mich.

At Vassar, Michigan, 135 Acres, Good buildings, good soil. Price \$12,000. Also 125 acres at \$50 per acre. Estate of Justin Wentworth, 607 Phoenix Bldg., Bay City, Michigan.

WANTED—Practical Farmer to take an interest in and charge of Riverview Ranch, Near Moosejaw, Saskatchewan, Canada. 1280 acres No. 1, level prairie wheat land. I will take Michigan real estate for an interest. A fortune for the right parties. Martin H. Holcomb, Owner, 288 Carlton Ave., Grand Rapids, Mich.

FOR SALE—80 Acre farm with house, barn, corn crib, orchard, fenced with woven wire fence, team of horses, cattle, hogs, and all the farm tools needed, 70 acres cleared, soil good sandy loam. Price \$2800, payment down and easy terms. If interested write or call on J. M. McFARREN, Rapid City, Michigan.

Want to Sell Your Farm?

If a bargain, and in desirable location, we are in shape to send the buyers, some with cash or to exchange. We do not handle any of your money. We charge no COMMISSION. Worthy of investigation. Your inquiry will bring full information.

DETROIT SALES SERVICE CO., Inc., 304 Hodges Bldg., Detroit, Michigan.

FARM AT AUCTION—On Thursday, March 4, 1915, at 12:30 o'clock, I will sell at auction my farm of 136 a., on Chicago Turnpike, 2 miles west of Somerset Center and 3 miles east of Moscow, in Hillsdale County, Michigan. 100 a. plow land, balance pasture, timber, and low land, well seeded and fenced, good soil, 35 a. alfalfa, brick house, horse barn, cow barn, two silos, tool house and other outbuildings. Terms—½ cash, balance on mortgage if preferred. Reasonable deposit at time of sale. Stock and tools will also be sold. M. R. MORTON, Jerome, Michigan.

MOVE TO MARYLAND

The State for Thrifty Farmers. Delightful, healthy climate. Good Land, Reasonable prices. Close to big markets of large cities of the East. Send for free descriptive booklet & map. **STATE BUREAU OF IMMIGRATION**, 65 Hoffman Building, Baltimore, Md.

Money-Making Farm

5 Horses, 18 Cows, Tools, Crops. Big, rich, productive 215-acre New York State farm, only 3 miles to large city, thrown on market with complete equipment for quick sale as owner, who has made money wants to retire to smaller place; 255 acres nearly level fields, remainder wood, large orchard; 2-story 12-room house, spring water; three big barns, poultry house, other buildings, maple shade, fine view; if taken now you get livestock, all machinery, wagons, tools, 25 acres oats, 10 acres buckwheat, 8 acres potatoes, 6 acres corn, 50 tons hay and other crops; only \$6000, easy terms; full details and traveling directions, page 1, "Strout's Special Bargain Sheet," copy free. E. A. STROUT FARM AGENCY, Statoin 101, University Block, Syracuse, N. Y.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
February 18, 1915.
Cattle.

Receipts 264. The embargo placed on cattle Tuesday shut off shipments all over the state and on Thursday there was no fresh animals received and nearly one thousand of last week's supply was still on hand unsold. Only about 300 were sold up to noon on Thursday and those at prices fully 75c per hundred lower than last week, or \$1.50 lower than those of two weeks ago. Every wholesale plant in Detroit is full of beef and very little selling, the Lental season starting yesterday had its effect with the consumer, but for several weeks beef has been selling very slow. Packers claim they are buying in Chicago for much less than they could get the same article for here, and the market there has dropped fully \$2.

The trade here Thursday was very slow and most of the receipts here will undoubtedly have to hold over, the drover being unable to unload without making a great sacrifice. Best heavy steers \$6.50@7; best handy weight butcher steers \$6@6.50; mixed steers and heifers \$5.50@6.25; handy light butchers \$5.50@6; light butchers \$5@5.50; best cows \$5@5.50; butcher cows \$4.50@4.75; common cows \$4@4.50; canners \$3@4; best heavy bulls \$5@5.50; bologna bulls \$4.75@5.25; stock bulls \$4.50@5.

Bishop, B. & H. sold Schuman 12 steers av 912 at \$6.25, 2 cows av 880 at \$5.25; to Bresnahan 5 heifers av 596 at \$5.75, 2 bulls av 835 at \$5; to Parker, W. & Co. 3 butchers av 880 at \$6, 4 cows av 760 at \$4.50, 14 butchers av 910 at \$6; to Fromm 2 cows av 1015 at \$5, 2 do av 940 at \$5.15, 1 do wgh 1200 at \$5.15; to Thompson Bros. 2 do av 1070 at \$5, 2 do av 970 at \$4; to Rattkowsky 2 do av 885 at \$4, 3 do av 1137 at \$4.50, 5 do av 948 at \$4.75; to Sullivan P. Co. 3 cows av 800 at \$4.25, 6 butchers av 1141 at \$5.75, 10 do av 909 at \$5.25; to Fromm 2 bulls av 1350 at \$5.50; to Mason B. Co. 10 steers av 805 at \$6.10; to Rattkowsky 8 cows av 980 at \$4.50, 7 do av 1040 at \$4.75; to Newton B. Co. 1 do wgh 940 at \$4.25, 6 do av 1093 at \$5.

Reason & S. sold Rattkowsky 3 cows av 1073 at \$5; to Parker, W. & Co. 3 do av 860 at \$4, 8 steers av 1096 at \$6.25; to Mich. B. Co. 1 bull wgh 1800 at \$6, 1 cow wgh 1220 at \$4.50, 1 steer wgh 1100 at \$6.

Roe Com. Co. sold Mason B. Co. 3 butchers av 900 at \$6, 7 cows av 1086 at \$5, 14 butchers av 823 at \$5.35; to Thompson Bros. 4 cows av 1037 at \$5, 10 steers av 899 at \$6.15, 1 do wgh 900 at \$6, 4 cows av 1007 at \$4.90, 4 steers av 910 at \$6.40, 9 do av 1075 at \$6.75, 1 do wgh 700 at \$6; to Sullivan P. Co. 14 canners av 913 at \$4.25, 4 bulls av 1250 at \$5.25; to Kamman B. Co. 9 steers av 924 at \$6.50; to Ratner 1 do wgh 1080 at \$4.25, 3 do av 890 at \$5.

Sandal, S. B. & G. sold Kull 3 cows av 933 at \$5.25, 11 steers av 770 at \$6.25, 3 cows av 1153 at \$5.50, 7 steers av 896 at \$6.25, 2 cows av 950 at \$5; to Kamman B. Co. 13 steers av 1070 at \$6; to Sullivan P. Co. 7 canners av 630 at \$4, 4 cows av 1127 at \$4.25, 1 do wgh 1050 at \$4.25; to Kamman B. Co. 5 do av 954 at \$4.50, 1 steer wgh 690 at \$5.50; to Newton B. Co. 5 do av 1076 at \$6.35, 5 cows av 1000 at \$4.50; to Bresnahan 4 butchers av 585 at \$5; to Sullivan P. Co. 1 cow wgh 1170 at \$5, 2 do av 1040 at \$4, 1 steer wgh 850 at \$6.50; to Goose 4 canners av 925 at \$3.75, 3 cows av 1010 at \$4.65, 1 bull wgh 1130 at \$5.50.

Veal Calves.

Receipts 463. The veal calf trade for the best grades was strong at last week's prices, selling at from \$10@10.50, with a few choice at \$11; common stuff was, however, very dull at from \$7@9.

Roe Com. Co. sold Sullivan P. Co. 2 av 160 at \$8, 7 av 150 at \$10, 3 av 130 at \$10, 3 av 165 at \$8, 2 av 160 at \$10, 6 av 150 at \$10; to Rattkowsky 8 av 190 at \$7.

Sandal, S. B. & G. sold Thompson Bros. 71 av 180 at \$11; to Newton B. Co. 4 av 155 at \$11, 9 av 150 at \$10.25; to Nagle P. Co. 3 av 165 at \$10, 5 av 160 at \$8.50, 1 wgh 130 at \$9.50.

Sheep and Lambs.

Receipts 3249. The sheep and lamb trade opened up strong with all grades selling 25c higher than last week, but

the close was hardly so good on lambs although sheep sold fully as high, the tops on Thursday being \$8.40. The quality was common as a rule. Best lambs \$8.25@8.40; fair lambs \$7.50@8; light to common lambs \$6.50@7.25; fair to good sheep \$5.50@6; culls and common \$4@4.25.

Sandal, S. B. & G. sold Thompson Bros. 3 lambs av 68 at \$7, 18 do av 80 at \$8.15, 2 sheep av 80 at \$5.50, 43 lambs av 50 at \$6.75; to Nagle P. Co. 12 do av 70 at \$8, 5 do av 80 at \$7.25, 1 bull wgh 160 at \$4.50.

Roe Com. Co. sold Sullivan P. Co. 102 lambs av 80 at \$8, 13 do av 75 at \$7.50.

Reason & S. sold Sullivan P. Co. 61 lambs av 75 at \$8.25, 34 sheep av 115 at \$5.75, 5 do av 117 at \$4.50; to Thompson Bros. 17 do av 115 at \$5.85; to Sullivan P. Co. 75 lambs av 80 at \$8.25; to Thompson Bros. 27 lambs av 65 at \$7, 39 sheep av 125 at \$5.85.

Hogs.

Receipts 6588. The hog trade was dull at a decline of fully 30c from Monday's prices and none sold up to time of going to press. Wednesday good grades brought \$6.70 and it looks like \$6.65@6.70 today.

Friday's Market.
February 20, 1915.

Cattle.

Market very dull; 450 still left unsold. Best heavy steers \$6.50@7; best handy weight butcher steers \$6@6.50; mixed steers and heifers \$5.50@6.25; handy light butchers \$5.50@6; light butchers \$5@5.50; best cows \$5@5.50; butcher cows \$4.50@4.75; common cows \$4@4.50; canners \$3@4; best heavy bulls \$5@5.50; bologna bulls \$4.75@5.25; stock bulls \$4.50@5.

Veal Calves.

Market dull. Best \$10@10.50; others \$7@9.50.

Sheep and Lambs.

Market steady. Best lambs \$8.25@8.50; fair do \$7.50@8; light to common lambs \$6.50@7.25; fair to good sheep \$5.50@6; culls and common \$4@4.25.

Hogs.

All grades \$6.60.

The breaking out of foot-and-mouth disease around Wichita, Kansas, put a stop to the previously large shipment of thin stock steers to points in Kansas, Nebraska and Oklahoma for summer grazing.



PUT STRENGTH INTO YOUR WORK HORSES

Health and "ginger" are just as essential to good work on the part of your horses as they are to the man who drives them.

Mix in with your horse-feed the new food that scientists have proved to be a genuine strength builder, tonic and health insurance—

BUCKEYE FEEDING MOLASSES

Cow, sheep and hogs thrive on it. Keeps cows healthy and makes more milk. Adds weight to sheep, makes finer wool and more of it. Makes every hog a big hog—no runts. Promotes profits in pork.

15 Cents a Gallon in bbl. lots,
F. O. B. Detroit, or 17 cents a gallon in bbl. lots
freight paid to any point in the United States.

OUR FREE TRIAL OFFER:
Send this coupon today and get our test proposition.

W. H. EDGAR & SON,

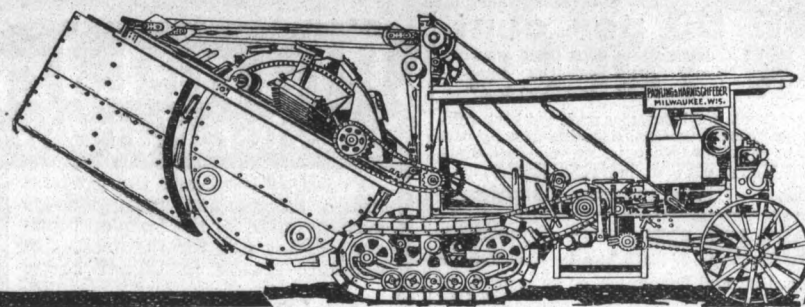
242 Lafayette Blvd., Detroit, Mich.

W. H. EDGAR & SON,
242 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.....



What "Digability" Means

"Digability" in a farm drainage excavator means plenty of power to meet the most exacting demands for which the machine is built, to operate the self-cleaning excavating wheel in sticky and gumbo soils as well as in soils favorable for machine work—to cut a clean, smooth trench at high speed, economically and of proper grade. "Digability" is what you get in



Farm Drainage Excavator

The P & H does not get stuck or choked up—does not stall in heavy soil or rough going—because it has surplus power—a power reserve that drives it through the hard spots. The P & H Corduroy Grip traction distributes the weight over so large a bearing surface that the machine can travel and do its work on ground too soft for horses to work on. The all-steel excavating wheel is under the operator's perfect control. For strength, power, simplicity of construction and excellence of materials and mechanical design, the P & H is unequalled.

Investigate the P & H. Write now for Farm Drainage Bulletin M containing illustrations and full information.

PAWLING & HARNISCHFEGER CO.
MILWAUKEE WISCONSIN

Make More Money with Poultry

Cyphers-Built Incubators \$10 and Up

World-famous Cyphers skill and care in incubator building can now be had at popular prices. Your choice of 3 styles of machines—8 sizes—all backed by Cyphers Co. guarantee. We sell everything for practical poultry raising. Write for 1915 offer and new 200-page catalogue, "The Profits in Poultry Keeping."

Cyphers Incubator Co.
Dept. 35 Buffalo, N. Y.
Boston, New York, Chicago, Dallas, Kansas City, Oakland

3 Styles 8 Sizes

HAY

Ship your Hay to Pittsburgh and to

Daniel McCaffrey Sons Company

Pittsburgh, Pa.

Ref—any bank or Mercantile Agency.

FARMERS—We will pay you the highest official Detroit Market quotation for your eggs shipped direct to us by express. Write us for information. It will pay you. AMERICAN BUTTER & CHEESE CO., Detroit, Michigan.

POTATOES—HAY—More Money if you Consign to THE E. L. RICHMOND CO. Detroit. 21 years in business. Reference your Banker

POULTRY.

BARRED PLYMOUTH ROCKS

"Hoosier Strain." Established in 1892. Winner of 11 first prizes at Chicago, Cincinnati and Indianapolis in two years. 300 fine Cockerels, some good cock birds, hens and pullets in any number. All stock shipped subject to approval. Prices reasonable. Write your wants. G. Earl Hoover, R. 7, Matthews, Ind.

BABY CHICKS—From our heavy laying S. C. W. Leghorns. Order now for future delivery. March \$15 per 100; April \$12; May and June \$10. Custom hatching 25c. in lots of 400 eggs, 3c apiece. Satisfaction guaranteed. H. B. BRACKNEY & SON, Clayton, Michigan.

FOXHURST STRAIN S. C. BLACK ORPINGTON Cockerels and Pullets for sale. Eggs in season. J. H. MILLER, 2133 4th Ave., Bay City, Mich.

White Wyandotte Cockerels—\$1.25 to \$3, none better. Eggs 16 for \$1. Extra Mule Foot Boars \$20. Seed Oats. FRANK BARTLETT, Dryden, Michigan.

White Rock Chicks—Prize-winning variety, very white, \$2 and \$2.50. Eggs in season. Order early. Mrs. Florence Howard, Petersburg, Mich.

ROYALTON BRED POULTRY—Fine S. C. Brown Leghorns and White Rock Cockerels at \$2, \$3 and \$5; from prize winning stock. D. F. VALENTINE, Sup't., Temperance, Michigan.

Eggs for Hatching from prize-winning Barred and White Rocks, winners at Battle Creek, Three Rivers, Union City and Mich. State Fair, Riverview Poultry Farm, Box 728, Union City, Mich.

FOR SALE—Rose Comb Brown Leghorn from the leading strains in America, also Mammoth Pekin Ducks. Stock and eggs in season. OLAUDIA BETTS, Hillsdale, Michigan.

Baby Chix \$10 per 100. Brown and White Leghorns, Barred Rocks, Buff Orpingtons, White Wyandottes, also Eggs. RIVER RAISIN POULTRY FARM, Dundee, Mich.

BARRED ROCKS—Parks, 200-egg strain. Also 200-egg strain Single Comb White Leghorns \$1.50 per setting. Fred Astling, Constantine, Mich.

MAMMOTH WHITE HOLLAND TURKEYS—Hens \$4; Toms \$5; H. O. BAILEY, R. R. 5, Montague, Mich.

R. C. & S. C. Rhode Island Red Eggs, \$1.50 per 15, postpaid. Also S. C. Red Cockerels, "Satisfy customers". Jennie Puell, Ann Arbor, Mich.

BIG Beautiful, hen hatched, farm raised Ringlet Barred Rock Chicks and females \$2 to \$5 each. A hen, 5 females and male \$10. Sold on approval. Circulars. JOHN NORTON, Clare, Mich.

BARRED ROCKS—Pullets and Cockerels, \$2 and \$3 each. Eggs for hatching and Baby Chicks. W. O. Coffman, R. No. 6, Benton Harbor, Mich.

Ringlet Barred Rock Cockerels. Birds of quality, R thirty years the standard. \$3 a-piece \$5 for two. PLAINVIEW STOCK FARM, Romeo, Michigan.

S. C. W. Leghorn Cockerels—Fine utility birds from ALFADALE FARM, R. No. 8, St. Johns, Mich.

WHITE WYANDOTTE COCKERELS. EGG-A-DAY POULTRY RANCH, Marshall, Mich.

65 Breeds—Chickens, ducks, geese, turkeys, guineas, hares and dogs. Stock and eggs reasonable. 60-page catalog free. H. A. SOUDER, Box 55, Sellersville, Pa.

Chicks: We ship thousands, different Varieties, prices right, order now for spring delivery, free booklet. Freeport Hatchery, Box 12, Freeport, Mich.

BARRED ROCK COCKERELS—\$3 each, two for \$5. Winners for 10 years. J. A. Barnum, Union City, Mich.

SILVER LACED GOLDEN and WHITE WYANDOTTES—A fine lot of White cockerels weighing 6 to 8 lbs. at \$2 and \$3 each. Browning's Wyandotte Farm, Portland, Michigan.

PINE CREST WHITE ORPINGTONS—The great winter pullets, hens, several pens, priced for quick sale. MRS. WILLIS HOUGH, Royal Oak, Michigan.

BARRED AND WHITE ROCKS—Large farm raised utility Cockerels. \$3 two for \$5. Bred for beauty and business. Order from this ad. Eggs in season. RIVERVIEW FARM, Box 798, Union City, Michigan.

S. C. White Leghorns—Farm raised, heavy laying strain. Baby chicks \$10 per 100, eggs \$4 per 100. Also White Pekin Ducks, eggs and ducklings. Sunnybrook Poultry Farm, Hillsdale, Mich.

White Wyandotte Cockerels, from thorough-bred stock and heavy layers. \$2.50 and \$3.50 each. A. Franklin Smith, R. F. No. 2, Ann Arbor, Mich.

White P. Rocks. Pekin and white runner ducks. White guineas, eggs and day old ducks and chicks. H. V. HOSTETLER, St. Johns, Michigan.

White Leghorns Day-Old-Chicks. Write for circular, faction to all our customers. MAPLE CITY POULTRY PLANT, Box C, Charlotte, Michigan.

DOGS.

Trained Running Fox Hounds—30 Fox and Coon hound stamp. W. E. LECKY, Holmesville, Ohio.

FOX, COON AND RABBIT HOUNDS Broke to gun and field. Prices right. Fox and Coon hound pups \$5 each. Stamp for reply. H. C. LITTLE, Fredericksburg, Ohio.

For Sale—SCOTCH COLLIE PUPPIES, pure bred, sable and white. \$10 with pedigree. W. AUSTIN EWALT, Mt. Clemens, Michigan.

SAVE 50 per cent. ON TREES

Buy direct from our Nurseries and get best, reliable, hardy nursery stock at a saving of fully one half. Write today for free copy of 1915 catalogue
CELERY CITY NURSERIES,
Box 112, Kalamazoo, Michigan.

CARMAN PEACH TREES

The Hardest and Best Peach of its season. 20 first-class trees of this Variety by EXPRESS PREPAID for \$2. Satisfaction Guaranteed. Your money back if not pleased. Write at once for our Price List on full line of high-grade Nursery Stock. Varieties true. No agents.

NEW HAVEN NURSERIES
Box 57, New Haven, - - Missouri

LIME

Pulverized lime rock for "sour" soils. Write for LOW PRICES DIRECT TO YOU and we will send sample and full particulars. Write to office nearest you

LAKE SHORE STONE CO.,
Muskegon, Mich., and Benton Harbor, Mich.

LIMESTONE

For General Farm Use.

Finely pulverized, made from highest high calcium stone. Quick shipments in closed cars. Let us send sample and price.

Northern Lime Co., Petoskey, Mich.

LIME—You should get the highest grade of limestone manufactured. Buy it upon the basis of analysis. We manufacture the highest grade pulverized limestone sold in Michigan. Let us prove it. Ask for sample and analysis.

CAMPBELL STONE CO., Indian River, Mich.

PULVERIZED LIMESTONE

For HIGH GRADE MATERIAL and PROMPT SERVICE place your orders with

D. O. MARKLEY,
862 Division Ave. South, Grand Rapids, Mich.

LILLIE'S SPECIAL BRANDS BUFFALO FERTILIZER

Made from best material. Always reliable. Lime, Potash, Acid Phosphate, Nitrate of Soda. Agents wanted in unoccupied territory. Ship direct to farmers in carlots. Fertilizer questions answered and farm soil surveys made on request.
Colon C. Lillie, Sales Agt., Coopersville, Mich.

SPORICIDE SURE CURE FOR SMUT in oats. Guaranteed. Simple to treat. Sent direct on trial where we have no agents. Free Booklet. Agents **Sporicide Chemical Co., ATLANTA, Ga.** Wanted

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., Box M, Fostoria, Ohio.

Our Trees and Vines Grow—Wholesale prices, big surplus of Apple, Peach, Pear, Plums, Vines, etc. Catalog free.
W. A. ALLEN & SONS, Geneva, O.

STRAWBERRY PLANTS,
Seed Potatoes, Seed Corn. Catalog Free.
FLANSBURGH & POTTER
Box 360, Leslie, Mich.

Strawberry Plants
Guaranteed as good as grows at \$1.00 per 1000 and up. Catalogue FREE.
ALLEN BROTHERS, R. 9, Paw Paw, Mich.

NEW STRAWBERRIES CATALOG FREE to all Reliable, interesting and instructive—All about the New Everbearing and other important varieties. Address **C. N. FLANSBURGH & SON, JACKSON, MICH.**

SWEET CLOVER SEED.—White and large biennial yellow. Prices and circular on request. **EVERETT BARTON,** Box 129, Falmouth, Kentucky.

SWEET CLOVER SEED We buy or sell—
YOUNG-RANDOLPH SEED CO., Owosso, Michigan.

Garden Seeds—Wholesale price to you 5c per oz. for vegetable seeds, etc. Write for Catalog today. **ALLEN'S SEED HOUSE, Dek. M, Geneva, Ohio**

Fruit Book Write at once. Secure valuable information early. Gives all best varieties of Apple, Peach, Pear, FREE! Plum, Cherry, Quince, even Berries, Roses, Ornamentals. Sold direct from Nursery. Highest quality, healthy, hardy, guaranteed true to name. Order now—pay in spring. Special prices on your list freight paid. **Denton, Williams & Denton, Wholesale Nurseries, 144 Elm St., Dansville, N. Y.**

Choice **SEED POTATOES** Northern Grown
CATALOGUE SENT ON REQUEST
NORTHERN SEED COMPANY
Box 26 :::: Grand Rapids, Michigan.

Seed Oats, Siberian, Imp. American, Swedish Select & 60-day. Big yields. Also Clover and Timothy seed. Write for samples and price. R. O. Evans, R. 1, Yonkers, O.

Trees—Roses—Vines
In small or large lots at wholesale prices. Catalog and Green's Fruit Book—FREE. **Green's Nursery Co., 29 Wall St., Rochester, N. Y.**

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**

FRUIT TREES

T. B. WEST, MAPLE BEND NURSERY, Lock Box 109, Perry, Ohio.

Planet Jr. Seeder-Harrow

Planet Jr tools are the greatest time-, labor-, and money-savers ever invented for the farm and garden. They pay for themselves in a single season in bigger better crops, and last a lifetime. Fully guaranteed.

No. 25 Planet Jr. Combined Hill and Drill Seeder, Double Wheel Hoe, Cultivator and Plow



A splendid combination for the family garden, onion grower, or large gardener. Is a perfect seeder, and combined double and single wheel-hoe. Unbreakable steel frame. Capacity—2 acres a day.

Planet Jr 12-tooth Harrow, Cultivator, and Pulverizer



Stronger, steadier in action, and cultivates more thoroughly than any other harrow made. Non-clogging steel wheel. Invaluable to the market-gardener, trucker, tobacco or small-fruit grower.

72-page Catalog (168 illustrations) free. Describes 55 tools including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard- and Beet-Cultivators. Write postal for it.
S. L. ALLEN & CO Box 1107M Phila Pa

Healthy Trees Perfect Apples

when you spray with
"SCALECIDE"
—the spray that's endorsed the country over as "The one great dormant spray." Mixed 1 to 15, it kills every scale it reaches or you get your money back. Guarantee with every package. It's easily prepared, non-corrosive and non-clogging. 1bbl. equals 3bbls. lime sulphur. Destroys eggs, larvae and fungi in dormant state. Simple, safe, economical. Send for free booklet, "Scalecide, the Tree Saver." Write today, to Dept. 22
B. G. PRATT CO.
50 Church St., New York City

EVERGREENS

38 Hardy Tested Varieties
Best for windbreaks and hedges. Protect buildings, crops and stock. Added warmth saves fuel—saves feed. Hill's evergreens are hardy, nursery grown. Get 15¢ free illustrated Evergreen Book and list of 50 Great Bargain Offers—from \$4.50 per thousand up. Fifty-six years' experience. World's largest growers. Write
D. Hill Nursery Co., Evergreen Specialists
2300 Cedar St., Dundee, Ill.

Galloway's 1915 Strawberry Sensation
The famous Everbearing variety. Has long fruiting season and large, highly flavored berry. Had my friends try a few last season. Wonderful results. Want you to try some. Special price, also free offer whereby I give my new customers some of these plants free. Write for position and handsome colored catalog filled with new and standard varieties of garden and flower seeds, etc. Address
Galloway Bros. & Co., 183 Galloway St., Waterloo, Iowa

SEED CORN

Highest yielding varieties. We welcome comparative tests between ours and others. **Wing's Improved Whitecap** has never been beaten in our fields. **Wing's 120-day Yellow** is earlier and was good enough to win the State Corn Contest in one-acre plots in 1912. Yield 139 bushels, 17 lbs. Our **Clarage** is maturing for us in about 100 days and yielding practically the same as later varieties. All our corn is cured on patent wire hangers which insures practically perfect germination. For many years our corn has been bred from ear-row test plots. Write for catalog and prices.
WING SEED CO., BOX 442 MECHANICSBURG, O.

PEDIGREED OATS

Worthy, Alexander, and other varieties. Bred and tested by the Agricultural College. Best of hundreds of varieties tested. Grown in Michigan and adapted to Michigan conditions. Also improved varieties of Barley, Corn, Soy Beans and other crops. Michigan Grown Sweet Clover Seed. Write to
SECRETARY MICHIGAN EXPT ASS'N,
East Lansing, Michigan.

"Strawberry Plants That Grow"

All the best June and Fall-bearing varieties. Also best Raspberry, Blackberry, Currant and Grape Plants; Asparagus and Rhubarb Roots in assortment. Our 1915 Catalog tells how you can get plants of our Wonderful New Seedling Strawberry, "Collins" absolutely FREE. Write for it.
C. E. Whitten's Nurseries, Box 14, Bridgman, Mich.

STRAWBERRY PLANTS—35 Varieties, \$1.65 per 1000. Catalog free. **MAYERS PLANT NURSERY, Merrill, Mich.**

Peach, Apple, Pear, Cherry, Plum, Grape Vines, small fruit plants, ornamental trees and shrubs, and roses. Vigorous hardy stock from the famous Lake Shore region of northern Ohio. Send for catalog.

The Apple Orchard Costs.

THE farmer is generally considered a poor book-keeper. Very often he does not know whether the year's results are on the debit or credit sides of the ledger.

There is no doubt about the economy of the sod mulch or sod and manure methods. As to whether it is advisable to use them in the orchard is a thing for each man to decide for himself; a great deal depends upon the local conditions. In no case would the cost per tree or per barrel be great, and the determination should be made upon the probable results, rather than the cost of the operation. There is, however, a slowly growing tendency toward the sod and mulching methods.

It is generally considered that the years of the get-rich-quick profits from apple orchards are a thing of the past. With the decrease in the profits one becomes more interested in less extravagant methods of production and endeavors to get the greatest results from the least expenditure of money. Therefore, the interest in the cost of production.

Cost Figures of Two Orchards.
During the writer's experience in renting orchards he kept careful account of his receipts and expenditures and from them he has figured the cost of some of the various orchard operators. These are supplemented by figures he has been able to obtain from other sources.

Accounts were kept of two orchards, A and B, for two years. Orchard A consisted of 117 trees about 50 years old, and with the tops "way up in the air." Orchard B was about 35 years old and consisted of 400 trees in quite good condition.

Cost of Pruning.
The cost of pruning, of course, varies with the amount done. In the orchards mentioned the amount done was not more than the average orchardist should do. In orchard A the average cost of pruning was 21½ cents per tree. The first year it was 27 cents and the second 16 cents. The high cost the first year was due to the neglect of pruning in the past. In orchard B the average cost was a little less than 12 cents per tree, the first year the cost being a little over 11 cents, while during the second year it was 12½ cents. Snow on the ground and cold weather were accountable for the higher cost the second year as not as much pruning was done then as the first year. In Iowa it was found that the cost of pruning varied from three to 20 cents per tree, the average cost there for bearing orchards of about 30 years of age, being 10 cents per tree.

It is interesting to figure the cost per barrel of each orchard operation as one can then find what the total cost of producing a barrel of apples consists of. In orchard A the first year the pruning cost 35½ cents per barrel, while the next year it was only eight cents. During the first year only 89 barrels were taken from the 117 trees while the next year the crop amounted to 231 barrels, which accounts for the great difference in the figures. In orchard B the pruning costs per barrel were 11 and seven cents for the two years.

Cultivation Costs.
In the rented orchards no cultivation was done, but figuring a cost one can well allow \$2.50 per acre for plowing and \$2.50 for cultivation. The seed for cover crop would average about \$1 per acre, making the cost of cultivation and cover crops about \$6 per acre. In the Auchter orchard in New York the cost of cultivation is placed at \$3.92 per acre, and the cost of sod mulch 75 cents per acre for clipping the grass. In the Ballard sod mulch orchard in Berrien county the cost is figured as follows: Clipping, 75 cents; straw, \$1.00; credit fertilizing value of straw, \$7.20, making the final cost of straw \$2.80. Total cost, \$3.55. 250 barrels averaged six barrels, and

Whether one should do more than 40 cents worth of spraying to a tree depends upon the thoroughness of the man and the productiveness of the orchard. If one is very thorough and gets the applications on at the proper time he may get such results that a large share of the crop is No. 1 grade. The larger the percentage of No. 1's the greater the profit and the less the cost per barrel. In most cases where the orchard has been brought up to a good annual state of productiveness additional sprayings will do much toward increasing the amount of No. 1 apples.

The advisability of adding to the number of applications of spray is well indicated in the results obtained by Mr. Frank Howard, of Berrien county. Mr. Howard sprays eight times and the results obtained by this practice are well indicated in the good crops he gets. From his old orchard of 40 trees he received in 1911 732 barrels, which netted him \$1,830. This makes an average of 18 barrels per tree, with the returns amounting to value of straw, \$7.20, making the final cost of straw \$2.80. Total cost, \$3.55. 250 barrels averaged six barrels, and

Get Spraying Results
with the
COMET
\$3.50 to \$4.50
Agents Wanted



THE Sprayers that are easiest to operate and always work perfectly. Foot rest detachable. Agitator and Brass Screen prevent clogging. Throws 50 foot stream of fine mistlike spray. All brass and weighs only 5 pounds. Send post card for full information, also our wonderfully liberal proposition to agents. Do it now.
H. B. Rusler Mfg. Co., Johnstown, O.

FREE TO DAY Orchard Test

STAHL SPRAYERS
We will ship you any Barrel Spraying Outfit in our catalog for a thorough Ten-Days' FREE Test.
Get Our New Catalog
Direct-from-factory-to-farm Selling plan saves you fully 40%. If not greatest bargain you ever saw, return it—test costs nothing.
Wm. Stahl Sprayer Co., Box 423 Quincy, Ill.

GOOD SEEDS

BEST IN THE WORLD
Prices Below All Others
I will give 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

The oldest, largest and most complete nursery in Michigan. Send for catalog. Prices reasonable.
I. E. ILGENFRITZ' SONS CO.
THE MONROE NURSERY, MONROE, MICH.

Peach and Apple Trees 2c and up

Peach, Cherry, Plum, Grapes, Strawberry, etc. Catalog Free.
TENN. NURSERY CO., Box 62, CLEVELAND, TENN.

Gartons CORN BELT OAT

is a record breaker in yield per acre and weight per bushel. Earliest of all large-berried oats. Of pure white color and great milling and feeding value. Extra large heads and strongest straw.
FREE Illustrated Catalog and Samples
will show you why we can sell our oats and other seeds under strong "money-back" guarantee.
Garton-Cooper Seed Co., Box 20 Sugar Grove, Ill.

SWEET CLOVER

BIGGEST MONEY-MAKER KNOWN—INVESTIGATE
The greatest forage plant that grows. Nothing equal for fertilizing. Excels Alfalfa as a producer. Crop worth \$50 to \$125 per A. Easy to start. Grows everywhere. Can save you money on best tested, guaranteed seed. Write today for Free Sample, circular and 32-page catalog.
A. A. BERRY SEED CO., Box 931, CLARINDA, IOWA

WEEDLESS FIELD SEEDS

We are trying with all our might to furnish absolutely pure, Red, Alsike, Mammoth, Alfalfa, Timothy, Sweet Clover, and all other field seeds, with all blasted and immature grains removed.
Write today for free samples and instructions "How to Know Good Seed."
O. M. SCOTT & SON, 26 Main St., Marysville, Ohio

DELICIOUS Here is a sample of our low prices:

J. H. HALE Apple, 2-yr., 3-5-ft., \$6.50 per 100. Peach, 2-yr. roots, 2-3-ft., \$2.75 per 100.
E. ELBERTA Stock Guaranteed as Represented.
Price List FREE
Lakeshore Nurseries, Girard, Pa.

SEED BEANS

From an Island in the Far North of Lake Michigan. Pea beans \$3.50; red kidney \$4. RAY KENT, South Manitou Island, Michigan.

BUY FEED—CAR LOTS

Oil Meal, Hominy, Gluten, etc. Save money. Ask prices. J. E. Bartlett Co., Red Mill, Jackson, Mich.

MEDIUM RED CLOVER SEED

99% purity, 97% germination. \$9.25 per bu. bags included.
DADMON BROS., Whitewater, Wisc.

SEED OATS

—Reg. Swedish select re-cleaned 80c, also Worthy at 90c per bu. Sacks free.
JOHN G. SCHWAB, R. No. 4, Vassar, Mich.

Seed Corn and Oats

—Satisfaction guaranteed.
JESSE W. PICKETT, Caledonia, Michigan.

120 BU. PER ACRE—The Corn Belt Oat.

—Description, prices and sample free. **MUNY-TOWN STOCK FARM, Flat Rock, Michigan.**

For Sale—400 Bushels of Senator Oats.

Ready to sow. Price \$1 per bushel. Sacks free. Yielded 70 bushels to the acre. Address **J. E. SKEOUGH, Maple Valley Farm, Coral, Mich.**

SEED OATS—Garton's No. 5—The Great Corn

Belt Oats. Heavy yielder. Straw very stiff and will not lodge. Berry large thin hull. Re-cleaned, free from smut. Bags free. \$1.10 per bushel. Sample. **E. B. CHRISTIANSEN, Coral, Mich.**

\$12.50 per tree, and in 1913 he got 12½ barrels per tree at \$33.33½. Mr. Howard has not had a crop failure in years. When one can get such returns the additional cost of 10 or 20 cents, or even 50 or 75 cents per tree for spraying is nothing. There are undoubtedly many orchards as productive as Mr. Howard's but the percentage of cider stock is so great that the number of barrels packed averages only three or four per tree.

The Rental Cost Per Barrel.

It has been considered in the past that the orchard renting proposition was a means of getting rich quick. Many renters, however, have found it otherwise. It is interesting to know what proportion of the cost per barrel the rent amounts to. A common price per tree is 50 cents. At this price orchards A and B were rented. In orchard A the proportion of the rent charged to each barrel during the first year was 70 cents. This high rent charge was due to the small crop of 89 barrels from the 117 trees. In 1912 the amount was only 28 cents per barrel. In orchard B the rent charge per barrel was 47 and 30 cents. If the rent cost per barrel can be held down to 25 or 30 cents it is a fair proposition, but if it gets above that the margin of profit is likely to be too small to make renting worth while.

The Average Harvesting Expenses.

The cost of harvesting is one that can be increased or decreased by the management given during the harvesting time. Due to management the cost may vary from 25 to 65 cents for the picking and packing. In the harvesting of the crop in orchards A and B care was taken to make the harvesting economical and efficient. Therefore the costs would present a fair average for the ordinary orchard. In orchard A 35½ cents was the cost of picking and packing a barrel the first year and during the second year it was 32½ cents, the higher cost the first year being due to the small crop. In orchard B the picking and packing costs were 33 and 28 cents respectively. The cost in orchard A was higher than in B on account of the difficulty in picking the high trees and the number of varieties to be picked. In Iowa the picking cost is estimated at six cents per bushel and the packing 16 to 25 cents per barrel. This would indicate that the costs of picking and packing would be about equal.

The total cost of producing a barrel of apples, including rent, in orchards A and B ranged from \$1.29 to \$2.12. Both of these costs were obtained in orchard A, the higher price being that of the first year when a small crop was obtained. That year there was a loss in that orchard as the apples only netted \$1.33 on account of being quite scaly. The costs in orchard B were \$1.67 and \$1.35½ per barrel. A prominent grower of New York figures the cost of picking and packing his apples at about \$1 to \$1.25. This figure, of course, does not include rent, and while rather low, present a good average where the work is well systematized.

Distance from Market a Factor in the

Cost of Production.

One rarely figures the distance to the market place, or the loading station, as a factor in the cost of production. It is, however, quite a factor and in buying a fruit farm it should be given serious consideration because the hauling cost will be a fixed charge on each barrel of apples for every year unless by the use of auto trucks one can lessen this cost some. In Iowa the cost of hauling is figured at 2.2 cents per mile. This seems a very fair figure. If one lives eight miles from the loading station there will be a fixed charge of over 17 cents per barrel on his apples. With that distance to travel one could only take about one load per day and with 20 barrels on a load at the above mile rate the allowance for the man and team for the day would be a little over

\$3.50. Of course, there would be time left after they got back to the farm to do other things. Orchards A and B were less than three-quarters of a mile from the shipping point and the actual hauling cost was a little over one cent per barrel.

Agriculture will become more systematized, more businesslike, in the future. Apple growing, on account of the profits made in the past, could afford to be done in a careless way, but because of these profits many orchards have been planted and in the near future the quantity produced will be greatly increased. It will be a case of the survival of the fittest. Michigan has every natural advantage to make orchards fit to survive. All we need is intelligent business management which means the creating of better marketing opportunities and the study of the cost of production so that the best results can be had with the greatest economy of cost.

As there is very little available information on this subject, the Michigan Farmer would be glad to get the experiences of those who have kept cost accounts of their orchards.—Eds.

TROUBLE DEPARTMENT.

Winter Pruning Injury.

What time do you advise for trimming an apple orchard? An expert from M. A. C., when lecturing here three years ago, told me to go home and get right at it, and I did so next day. The trees were 20 years old, and last summer I cut down ten dead trees that were worth \$150. I lay it to the trimming. Would you advise dynamiting the stumps out and setting young trees in their places?

Sanilac Co.

J. R. S.

While winter is not, from a theoretical standpoint, the ideal time for pruning, most all fruit growers practice it because it enables them to get this work out of the way when they have plenty of spare time. March is the ideal month for this work, but there are numerous other things to do at that time, and if one waits until then he would be crowded with work which should be done then. Winter pruning never has, to the writer's knowledge, caused the least injury to the trees, and the one who advised you to prune in winter was perfectly right in doing so. There must have been some other cause for the tree dying which you were not aware of. Last winter mice did considerable girdling, therefore this suggests itself as a probable cause of the trouble, or the trees may have been winter injured about the crown in such a way that the entire flow of sap was restricted, thus causing the death of the tree. If these are not probable causes of the trouble, look for something else, as the pruning you gave them would never have caused it.

It is not generally considered advisable to set young trees in the place of old ones, as the old tree has taken the plant food from the soil so that it puts the young tree to disadvantage in starting. Also, the other old trees about it would take considerable food material from the young tree. But if one gives young trees special attention he can make a success in growing them. Either dynamite or pull the old stumps and then put a liberal application of manure in the hole before planting. Do not have the manure so it will come in direct contact with the roots of the young tree, but mix it thoroughly with the soil before putting the young tree in. Occasional applications of manure to the surface of the ground around the young tree in future years will also help to counteract the effects of the older trees around it, and materially help to stimulate its growth.

If you have not ordered your trees and plants yet, it is advisable to do so now while you still have plenty of time to consider the kinds and varieties to get. You will also oblige the nurseryman by getting your order in early.

A TOP Dressing of Nitrate of Soda on Wheat should give you a splendid increase in yield of heavier, better Wheat than you have been producing.

To the farmers who apply I will send absolutely free enough Nitrate of Soda to try it. This offer is necessarily limited, so write at once. To the twenty-five farmers sending the best results from these trials, I offer as a prize Prof. Voorhees' book "Fertilizers," a standard work of 327 pages, handsomely bound.

Send post card with name and complete address, mentioning this Journal

WILLIAM S. MYERS, Director
25 Madison Avenue, New York

Roses, Plants, Seeds,

Trees, Shrubs, Bulbs, etc. by mail, express or freight. Safe arrival and satisfaction guaranteed. Everything you want for lawn, garden or orchard. 1.00 acres devoted to growing stock, 60 in hardy roses alone. 45 greenhouses, 61 years' experience. 192-page Catalog Free. Write for it today.
THE STORRS & HARRISON CO.
Box 543, Painesville, Ohio.

BANKER'S TRIAL COLLECTION. Let's Get Acquainted

100 Fruit Trees, Berry Bushes & Grape Vines, \$5 Money back if not satisfied when you see the trees. 20 Apple trees—5 to 7 ft. 2 years—4 Baldwin, 2 Banana, 2 McIntosh, 2 R. I. Greening, 2 Red Astrachan, 2 Stayman, 2 York Imperial, 2 Black Ben Davis, 2 Stark, 10 Pear trees No. 1—2 year—2 Bartlett, 3 D'Anjou, 5 Kieffer, 1 Elberta Peach, 1 Ea. Crawford, 1 Montmorency Cherry 3 to 5 ft., 1 Crab Apple, 1 Burbank plum 5 to 7 ft., 10 Grape Vines, 5 Concord, 5 Niagara, 1 yr., 25 Black-berry large size, 25 St. Regis Red Raspberry, 1 year. Get my big Catalog, it's free. I sell only trees I grow. **D. G. BANKER, DANVILLE, N. Y.**

3 Garden Tools in 1

The BARKER Weeder, Mulcher and Cultivator
The only garden tool that successfully, in one operation, kills weeds, and forms a complete soil mulch to hold moisture. "Best Weed Killer Ever Used." A boy with a Barker beats ten men with hoes. Has shovels for deeper cultivation. Self-adjusting. Costs little. Write for illustrated folder and special Factory-to-User offer.
Barker Mfg. Co.
Box 105, David City, Nebr.

The "Berlin Quart"

The White Basket
That secures highest prices for your fruit. Write for 1915 catalog showing our complete line and secure your baskets and crates at WINTER DISCOUNTS.
The Berlin Fruit Box Co.
Berlin Heights, Ohio.

Disco NORTHERN GROWN

ALFALFA SEED
Extra choice, hardy northern grown registered stock. Fully, Germination and Quality Guaranteed. Tested by State and U. S. Seed Laboratories. —warranted to comply with all Seed Laws. Send for Free sample Disco Registered Alfalfa Seed and Free copy Disco Alfalfa Disk telling how to grow alfalfa successfully everywhere.
DAKOTA IMPROVED SEED CO., 34 Main St., Mitchell, S.D. (1)

CLOVER \$5.00

AND TIMOTHY
INVESTIGATE—Best and Cheapest Seeding Known. Alsike Clover and Timothy mixed. Fully 1-3 alsike, a big bargain. Greatest hay and pasture combination grown. Write for Free Sample and 32-page catalog and circulars describing this wonderful grass mixture. Beans anything you can sow and ridiculously cheap. We handle only best tested re-cleaned seed guaranteed. Write before advance.
A. A. BERRY SEED CO., Box 931 Clarinda, Iowa

KANT-KLOG SPRAYER

Spray Your Trees
9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. Send for catalog. Agents wanted.
Rochester Spray Pump Co.
199 Broadway Rochester, N. Y.

PARK'S FLORAL GUIDE—all about flowers, a Surprise Mixed Flower Seed Pkg., 1000 seeds a 10c Seed Coupon and copy Park's Floral Magazine the oldest and most popular Floral Magazine in the world all for stamp. Don't miss it. Geo. W. Park, LaPark, Pa.

STRAWBERRY PLANTS.

1000 for \$1 as per new offer in free catalogue. 100 varieties and Everbearers listed. Seed corn, potatoes, raspberries, vines, shrubs, fruit trees and everything.
ALLEGAN NURSERY, Allegan, Michigan.

BERRY PLANTS

ALL KINDS. Millions of them. Catalog Free.
W. N. Scarff, New Carlisle, O.

Better Disking Bigger Dividends



This year, do the best disk-ing you have ever done—it will make you money.

Cutaway
CLARK

disk harrows make it so easy to do good disk-ing that there is really no excuse for doing any other kind—and there's a style and size for every farmer. Ask your dealer to show you CUTAWAY (CLARK) disk harrows and plows. If he does not sell them, write to us. We ship direct where we have no agent.

Send for new catalog today
THE CUTAWAY HARROW COMPANY
Maker of the original CLARK disk harrows and plows
992 Main Street Higganum, Conn.

Steel Shingle Bargains

Better Than Wood Shingles Every Way

Make that roof proof against rot, rust, fire, weather and after expense with

Edwards STEEL Shingles

Cost much less than wood shingles—last many times longer. No exposed edges. Dipped in molten zinc after they are cut. Patent "interlocking" device makes them watertight. Patent "lightweight" process gives them remarkable durability. Come in handy sheets of 100 or more. Easily laid with hammer and nails. A \$10,000 guarantee bond insures you against lightning loss.

Sold direct to you at factory prices. We pay freight charges. Learn more of their wonderful economy and utility. For any building. Write today—NOW—for money-saving catalog 267. Give size of roof if possible.

THE EDWARDS MFG. CO. 217-267 Lock St. Cincinnati, O.

BOWSER FEED MILLS

Crush ear corn (with or without shucks) and grind all kinds of small grain. Handy to operate—lightest running. 10 sizes: 2 to 25 h. p., capacity 6 to 200 bushels. Conical shape Grinders. Different from all others. Also make Sweep Grinders.

Write for Catalog and folder about the value of different feeds and manures.
D. N. P. BOWSER CO.
South Bend, Ind.

Why Not Get Ahead?

Getting ahead is largely a matter of profiting by the success of other men. But you must watch the fellows who are doing things. Most of the progressive farmers read The Breeder's Gazette, because it shows how men make real money farming. One year for \$1.00. Send for a free copy. **The Breeder's Gazette**
Room 1125, 542 S. Dearborn St., Chicago, Ill.

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.,
35 Elm Street, Quincy, Ill.

6 H. P. \$96.75

1½ H.P.	\$24.75
2 H.P.	28.75
3 H.P.	33.90
4 H.P.	38.90
5 H.P.	43.90
6 H.P.	48.90
8 H.P.	63.50
10 H.P.	78.50
12½ H.P.	114.50

Many other sizes—all sold direct and fully guaranteed. BIG 32-PAGE CATALOG FREE. Write today.
OTTAWA MFG. CO., 216 King St., Ottawa, Kans.

Government Farmers Wanted:—Age 21 to 50 monthly. Write, OZMENT, 17 E. St. Louis, Mo.

Grange.

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

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
Overseer—C. H. Bramble, Tecumseh.
Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby.

AN INTERESTING CONFERENCE OF DEPUTIES.

State Master Ketcham called a portion of the Grange deputies together at Lansing on Tuesday, December 22. At this meeting were discussed several matters of interest to members of the Order generally, and it is the thought of the writer to bring some of these matters to the attention of readers of the Michigan Farmer in order to help, if possible, to center the public thought upon these plans for "Rural Betterment."

I think the scheme had its rise in one of the most interesting features of the late meeting of the Michigan State Grange at Battle Creek. Reference is here made to a very strong address delivered in open session, by Worthy Master Chas. M. Gardner, of Massachusetts. This address was a plea for rural betterment, under the title, "The Overflowing Grange." It was a wonderful lecture. I shall not describe it, though I wish it might have been the privilege of every reader of this paper to have listened to it.

Lectures are like fruit trees. They may look all right when they are delivered, but they are not worth much unless they live to bear fruit. The best thing about Brother Gardner's lecture is that it has borne fruit. The strongest features of this deputies' conference were suggested by the address referred to.

Our Grange deputies are to urge a movement toward better things in country life.

Ten lines of this kind of work will be suggested, not all of them will be attempted in the same Grange, but all will be brought to the attention of the members of the Order in a general way, and it is to be hoped that one or more will be attempted in practically every Grange organization in the state. Here are the ten ways in which country life may be made better worth while.

First—by encouraging standard schools.

Second—by uniting with the school and the Department of Agriculture in promoting corn and potato contests for boys and appropriate competitive work for girls.

Third—by the uniform lettering of names upon rural mail boxes.

Fourth—by erecting danger signals at crossings, and dangerous curves along the highways.

Fifth—by placing bulletin boards at convenient intervals in order to discourage the reckless nailing of bills upon farm fences, telephone poles, and even upon flag poles on some of our school grounds.

Sixth—by placing watering troughs by the roadside where they are needed for the comfort and convenience of the traveling public.

Seventh—by caring for and beautifying rural cemeteries.

Eighth—by encouraging singing schools, literary societies, debating clubs as means of developing our young people who live in the country.

Ninth—by promoting co-operation on the part of communities in voluntary road building where there is not sufficient public money to do the necessary work.

Tenth—by co-operating with the county Y. M. C. A. wherever such an organization is found, in the interest of our country boys.

The Grange lives by what it does for the community in which it is located. A Grange may exist for a time upon the old story of how a plaster monopoly was once broken, or how the Order, in its younger days, prevented the renewal of the patent upon sewing machines, but not for long. Primary reform, the initiative and referendum, parcel post, and a lot of other good things accomplished by the Grange are monuments to its usefulness, but no Grange can long survive on the iteration and reiteration of these victories for the people.

The successful Grange must live in the present. It must find good things, necessary things, to do right now. It must prove the wisdom of its existence by paying its way as it goes along, or it will grow weak and its members will be indifferent and those outside its gates in the community, will ask "of what use is it to belong to the Grange, anyway?"

Now, here are ten excellent ways in which any Grange may prove its usefulness. In a future number of this paper it is my purpose to speak in particular of each of these lines of "Rural Betterment." But enough for this time.

Oceana Co. W. F. TAYLOR.

AMONG THE LIVE GRANGES.

Installation of Officers of the Independence Grange, No. 275, was held at their hall in Clarkston, January 16. About 50 members and visitors were present, including eight from Brandon Grange. An oyster dinner was served at noon and was an enjoyable feature of the day. Following this was the installation, conducted by State Delegate William Tucker, who is also the master of his own Grange, and the new Pomona master as well. Nelson Smith and Mrs. Bert Guiles assisted him very ably in the work of the afternoon and our Grange extends them a hearty vote of thanks for their services, it being the best installation held here in years. Bro. Tucker gave a very complete and interesting account of the Battle Creek meeting, including the reading of extracts of Bro. Gardner's splendid address. All enjoyed his description of the Battle Creek cereal plants and their methods of preparing their goods for the market. Bro. Jasper Lowery gave us an account of the recent Pomona meeting at Pontiac. Our hall is much improved by the new electric lights recently installed.—L. C. Galligan, Sec.

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—R. J. Robb, Mason.
Vice-president—C. J. Reed, Spring Arbor.
Secretary and Treasurer—Mrs. J. S. Brown, Howell.

Directors—Alfred Allen, Mason; Joseph Harmon, Battle Creek; C. B. Scully, Almont; C. T. Hamline, Alma; W. K. Crafts, Grass Lake; Edward Burke, St. Johns.

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

Associational Motto:

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

Associational Sentiment:

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

WHAT THE LOCAL CLUBS ARE DOING.

The delegate from the Ceresco Farmers' Club of Calhoun county reported an average attendance of 125 to 130 at its monthly meetings. Eleven meetings and a picnic are held during the year. The organization of a county association for Calhoun county was also advocated by the delegate, who stated that the Club which he represented would agitate this question during the coming year.

The delegate from the Hadley and Elba Farmers' Club of Lapeer county, stated that yearly programs were used in the Club. Eleven meetings are held during the year and a picnic in August. Topics for discussion are assigned by a committee. Special features include Children's Day in June, a Club fair in October and a Thanksgiving dinner in November. The membership totals about 170, and there is an average attendance of fully half this number at the regular meeting each month.

The delegate from the Deerfield Farmers' Club, of Livingston county, stated that the interest in the organization is on the decline; it has been organized 17 years. The president selects the place of meeting. An effort will be made to interest the younger people in the organization.

The Lebanon Farmers' Club, of Clinton county, reported through its delegate 11 meetings during the year. The children are interested in the work of the Club by calling upon them to help in the programs of entertainment. Corn club work was tried out last year with fair success, and will be tried again next season.

CLUB DISCUSSIONS.

The Ray Farmers' Club held its February meeting at the home of Mr. and Mrs. Lewis Broughton. One hundred and seventeen members and invited guests were present. The tables were daintily decorated with red hearts. After an appetizing and well served dinner the meeting was called to order by the president, J. A. Priest. Roll call was responded to with quotations from Lincoln. A discussion of the hoof-and-mouth disease was led by C. S. Priest. Prof. J. A. Muma, of Romeo, told a story and gave a recitation which was well received, and he kindly responded to an encore and recited "Whistling in Heaven." Reading by Mrs. E. M. Frost, "An Accidental Cure in a Sleeping Car." Meeting adjourned to meet March 11 at the home of Mr. and Mrs. E. H. Livermore.—Mrs. E. M. Frost, Cor. Sec.

Start Year Auspiciously.—The first meeting of Salem Farmers' Club for the new year was held at the pleasant and commodious farm home of Mrs. H. C. Waldron. Although the day was rainy a good number of guests and members of the Club gathered and enjoyed the day. After the usual bountiful dinner, President Thompson called the Club to order and a fine program was given, consisting of reports, music by Mrs. Waldron on the phonograph, select readings by a number of the members. An excellent paper was read by DeForest Thompson, on "Soil fertility, how to maintain and increase it." As this paper was by one of our boys, it showed a very creditable amount of study and application, as well as a good working, everyday knowledge of the subject in hand. The Club then discussed the subject of holding another corn contest for 1915. It was voted to hold such contest, and a good deal of enthusiasm and profitable experience is hoped for among those who take part. It was also voted to hold an institute in February at the Town Hall. Closed with music.

Travelers' Day.—Washington Center Farmers' Club held an interesting and busy meeting at Social Glen with Mr. and Mrs. Frank Brown, February 11. The exercises were opened with singing by the Club. After the regular business was disposed of the balance of the morning session was devoted to the discussion of hog cholera. The question, "Should not farmers take more severe measures to stamp out hog cholera, also the disease in all its forms?" was thoroughly discussed. No new ideas were brought out as to its prevention. The dinner and social hour is always an interesting feature and this one was no exception. The afternoon session was opened with music, violin and organ, by Mr. Brown and daughter. Roll call was well responded to by naming a place of interest visited in 1914. This was "Travelers' Day," and as several of our members had visited different states on their vacations, each gave a description of the most interesting places visited. Six states besides our own Michigan were covered on these delightful trips during the summer and fall. It was very instructive as well as entertaining. At our next meeting we will take up the question of "children's contests." The March meeting will be held at River View, with Mr. and Mrs. John Tobey and will be pioneer day.—Mrs. S. N. French, Cor. Sec.

Build
Your
Silo

With
This
Superior
Block

THE ends lap over similar to a "ship-lap" joint—braces tile against tile—gives you the maximum durability of tile—the ideal silo material—defies age, fire, winds, winter frost and summer heat.

Write for Literature

and let us tell you about this superior construction in the Lansing Vitified Tile Silo. Reinforced throughout with twisted steel—10% stronger than steel not twisted. New fluted end keeps mortar from slipping before it hardens—prevents air leaks—gets stronger grip. Extended shoulders top and bottom leave only thin mortar line exposed inside and out—silage settles better—less chance for frost—silo has better appearance. Steel hip roof gives extra footage. Doorway is easy to climb. Write today for catalog.

J. M. PRESTON CO.
Dept. 309 Lansing, Mich.
Get our offer on Climax
Silage Cutters
and Bidwell Thrashers

Lansing
Vitified
Tile
SILO

CHEAPEST and BEST FEED For Cows

All of the sugar beet left after man's food (sugar) has been soaked out by water. Clean, wholesome, pure, dried vegetable food.

LARROWE'S
DRIED BEET PULP

Free from adulteration. Don't buy bran, middlings, cornmeal, barley, oats or other carbohydrate feed when you can get a better feed like Dried Beet Pulp for less money per ton. Ask your dealer.

THE LARROWE
MILLING
CO.,
1009 E. 10th St.
DETROIT,
MICH.

REASONS why the is the BEST ROSS SILO

We use Guaranteed Long Leaf Yellow Pine that will last longer than any other wood, except cypress. The highest possible grade of Oregon Fir is used.

The Ross Silo has features that are exclusive, and absolutely necessary to make a good silo.

FULLY GUARANTEED

to be as represented. Our 33 years of manufacturing experience is valuable to you. FREE catalog explains all. Write for it today. Agents Wanted.

The E. W. Ross Co., Box 14 Springfield, O.

The Guernsey Silo Glazed Tile-Steel Reinforced

New Rock-Face or smooth glaze. Proof against wind, sun, frost, fire and time. No repairing, painting nor adjusting. Scientifically correct. Absolutely guaranteed. Everlasting. Write for FREE GUERNSEY BOOK Profusely Illustrated containing valuable information on practical silo building. Agents wanted.

Guernsey Clay Co., 908 Fletcher Bldg Indianapolis, Ind.

EARN COST THEN PAY. TILE SILO

Chain of Kilns; Atlantic to Rio Grande. Reduces freight cost; fire and frost-proof; weight anchors itself; ample hoopage galvanized; priced at your town; 5 year warranty; free sample. Kalamazoo Tank & Silo Co., Kalamazoo, Mich.

Mention the Michigan Farmer when writing to advertisers.

Practical Science.

FOOD LAW ENFORCEMENT IN AND FOR MICHIGAN.

(Continued from last week.)

BY FLOYD W. ROBISON.

The Legislature of 1905 passed a very important amendment to the law when it made it the duty of the Dairy and Food Commissioner to foster and encourage the dairy industry. This amendment in reality was an amendment legalizing the spirit of co-operation between manufacturer and executive official in enforcing the law, and has made possible the accomplishment of a great deal of good along food and dairy lines. A law providing for the inspection and analysis of commercial feeding stuffs was added by the Legislature of 1905 and a law extending the province of the Dairy and Food Department to linseed oil was added in 1909, and a very important addition known as act 146, of the Public Acts of 1909, to prohibit and prevent adulteration, mis-branding, fraud and deception in the manufacture and sale of drugs, food and drink products was placed within the jurisdiction of the Dairy and Food Commissioner.

The General Food Law.

The most important enactment controlling the food and drink supply of the state is known as act No. 193, public acts of 1895, entitled, "An act to prohibit and prevent adulteration, fraud, and deception in the manufacture and sale of articles of food and drink." This act, which is known as the General Food Law, is the elastic clause of the food law which governs all cases which are not specifically provided for by other special statutes. That the General Food Law does apply only in the absence of other special statutes is shown clearly by the decision of the state supreme court in the case of the injunction proceedings brought by the Pierre-Viaus Maple Co., vs. Arthur C. Bird, Dairy and Food Commissioner. There was on the statute books a specific law prohibiting certain forms of adulteration in maple syrup and sugar. The complainant contended that their case was covered by the general food law, and claimed no adulteration under the general food law. The supreme court held that inasmuch as there was a specific law covering maple syrup and maple sugar, it was the intention of the Legislature to legislate specifically for these products and that this specific law took precedence over the general food law. They thus reasoned by inference, at least, that the general food law really was planned to cover all products that were not specifically covered by other express statutes, and to add provisions for the apprehending of products whenever they were not reached by the specific statute. This law is of such importance that at this point we shall give the legal definitions of what constitutes adulteration in the eyes of the law.

Section 3, of the General Food Law, reads as follows:

An article shall be deemed to be adulterated within the meaning of this act:

First, if any substance or substances have been mixed with it so as to lower or depreciate or injuriously affect its quality, strength or purity;

Second, if any inferior or cheaper substance or substances have been substituted wholly or in part for it;

Third, if any valuable or necessary constituent or ingredient has been wholly or in part abstracted from it;

Fourth, if it consists wholly or in part of a diseased, decomposed, putrid, infected, tainted or rotten animal or vegetable substance or article, whether manufactured or not, or in

the case of milk, if it is the product of a diseased animal;

Fifth, if it is colored, coated, polished, bleached or powdered whereby damage or inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is;

Sixth, if it contains any added substance or ingredient which is poisonous or injurious to health; Provided, that nothing in this act shall prevent the coloring of pure butter.

The Misbranding Section.

Sec. 3 (a). An article shall be deemed to be misbranded within the meaning of this act:

First, if it is an imitation of, or is offered for sale under the name of, another article;

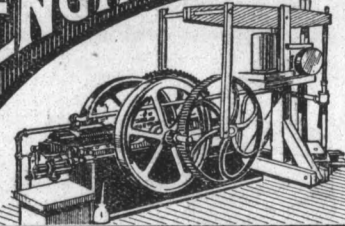
Second, if it is labeled or branded so as to deceive or mislead the purchaser, or purpose to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package;

Third, if in package form every package, box, bottle, basket or other container does not bear the true net weight, excluding the wrapper or container, which shall be stated in terms of pounds, ounces, and grains avoirdupois weight, or the true net measure, which measure, in case of liquids, shall be in terms of gallons of 231 cubic inches or fractions thereof, as quarts, pints and ounces or the true numerical count, as the case may be, expressed on the face of the principal label in plain English words or numerals, so that it can be plainly read: Provided, however, that reasonable variations shall be permitted and tolerances therefore and also exemptions as to small packages shall be established and promulgated by the Dairy and Food Commissioner: Provided, however, that no penalty of fine, imprisonment or confiscation shall be enforced for any violation of subdivision third of this section prior to September 1, 1914, as to goods in the hands of wholesalers or retailers when this act takes effect or received prior to January 1, 1914. The provisions of this subdivision shall not apply to beverages in glass containers:

Mixtures and Compounds.

Fourth, if the package containing it or its label shall bear any statement, design or device regarding the ingredients or the substances contained therein, which statement, design or device shall be false or misleading in any particular; Provided, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles or ingredients of articles of food, if each and every package sold or offered for sale bear the name and address of the manufacturer or jobber or retail merchant with an established business, and be distinctly labeled under its own distinctive name, and in a manner so as to plainly and correctly show that it is a mixture or compound and is not in violation of any of the foregoing provisions of this act. Every article of food as defined in the statutes of this state shall be sold by weight, measure or numerical count and as now generally recognized by trade custom, except where the parties otherwise agree and shall be labeled in accordance with the provisions of the food and beverage laws of this state. Only those products shall be sold by numerical count which cannot well be sold by weight or measure. All foods not liquid, if sold by measure, shall be sold by standard dry measure, the quart of which contains sixty-seven twenty one-hundredths cubic inches. (Continued next week.)

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



This WITTE Engine, after 27 years, still giving good service to S. A. Stone, Chillicothe, Mo.

WITTE ENGINES

Kerosene, Gasoline & Gas

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

LOOK AT THESE PRICES!

2 H.P., \$34.95; 4 H.P., \$69.75; 6 H.P., \$97.75;
8 H.P., \$139.65; 12 H.P., \$219.90;
16 H.P., \$298.80; 22 H.P., \$399.65.

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

LIBERAL 5-YEAR GUARANTY.

Easy terms of payment, at regular prices, if you don't wish to pay all cash.

Book Free Get my Book before arranging to try any engine. Costs 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 and Best Offer by return mail.

Ed. H. Witte, Witte Iron Works, 2195 Oakland Ave., Kansas City, Mo.

Send for this FREE BOOK HOW TO JUDGE AN ENGINE WITTE



Time, Storms,
Decay and Fire
Defied!

THIS silo is made of vitrified hollow clay tile that will last forever, and each tier of these tile is reinforced by continuous bands of steel laid in mortar. No painting or repair bills. The

Natco Imperishable Silo

"The Silo That Lasts for Generations"

Is weatherproof, decayproof, verminproof and fireproof.

The vitrified tile walls are impervious to either air or moisture and their dead air compartments prevent freezing. Don't take our word for these claims—write to our nearest branch for a list of Natco owners in your State—ask what they have to say. Also write for our catalog.

National Fire Proofing Company

Organized 1889 Pittsburgh, Pa.

Syracuse, N. Y. Philadelphia, Pa.
Huntington, Ind. Bloomington, Ill.
Madison, Wis. Lansing, Mich.

\$4⁷⁵ Buys a
Genuine
"IOWA"
Cream
Separator
Get Our
Free
Book

A Great Offer A Real Bargain

Just the machine for you if your herd is small. Famous patented Curved Disc bowl, owned exclusively by us, skims warm or cold milk exhaustively. Finest grade of hardware. Enclosed dust-proof gears. Quality is guaranteed in every particular. Splendid shop organization, factory equipment and quantity output, accounts for low prices impossible without great output. Equally attractive prices on larger Separators. Write for descriptive Separator book.

ASK ABOUT FAMOUS "CHORE BOY" LINE OF GASOLINE ENGINES—MADE IN ALL SIZES

\$28 AND UP

ASSOCIATED MANUFACTURERS CO.

181 Mullan Avenue WATERLOO, IOWA

Get a Silo Roof FREE

Increase the capacity of your silo twenty-five per cent, make better silage, save time and labor at filling time and let the increased profits pay for the

**HOOSIER
EXTENSION-ROOF**

Opens outward for filling, permitting you to fill 6 or 7 feet above top of silo walls, leaving silo full after settling. Closes tight protecting and bracing silo and preserving contents. Fits any make of silo. All metal, with plate glass skylight. Easily erected. Lasts a lifetime. Sold on approval. Agents wanted. Write today for Catalog.

SHEET METAL SPECIALTY CO.

Dept. G. Goshen, Indiana Kansas City, Mo.



80 HEAD

For Immediate Sale

60 STALLIONS

Ready for Service.

20 Brood Mares with foal, also some Yearlings and 2-year-old Fillies.

All of these at your own price.

Write now before they are gone.

JOHN CRAWFORD,
Importer. - - Byron, Michigan

Dunhams' Percherons

are today as for the past Forty-eight years the breed's best.

As a matter of fact you can also get more here for your money than elsewhere. If you are interested in

Percherons

and want to get in touch with the oldest concern in the business—the one that handles the best class of horses, and whose reliability is proven by the experience of thousands of satisfied customers. Come and see us.

New illustrated catalog on application.
DUNHAMS', Wayne, DuPage County, Illinois.

LOESER BROS.

We have sixty head of imported Belgian and Percheron stallions and mares, from weanlings up. We are also offering a car lot of big drafty grade brood mares all in foal, weighing 1600 to 1800 pounds.

LIGONIER, IND.

METZ BROS.,
Importers and Breeders of
Percheron Stallions and Mares

We have a fine selection of stallions and mares ranging from 1 to 6 years old. Prices reasonable, terms to suit purchaser. **METZ BROS., Niles, Mich.**

PERCHERON SALE.

Farmers and Breeders Attention.

In order to insure quick sales we have decided to cut our prices. Your choice for \$1000. A lot of good ones at \$400-\$500-\$600.

A. A. PALMER & SONS,
R. R. Orleans. P. O. Belding, Mich.

FOR SALE—One Pair of Oh. Belgian Geld's 5 yrs. old, wt. 2800 lbs.; One Pair of 5 yr. old Percherons, wt. 2850 lbs.; One Pair of Brown Belgian Geldings, wt. 2850 lbs.; One Blue Roan Gelding, 5 yrs. old, wt. 1540 lbs.; One Brown Gelding, 5 yrs. old, wt. 1500 lbs.; one Bay Blocky Mare, 6 yrs. old, wt. 1500 lbs.; One Red Roan Gelding, wt. 1300 lbs.; 7 yrs. old; One Black Mare, 8 yrs. old, wt. 1350 in foal to 2200 lb. Belgian Stallion. No. of other single Mares and Geldings suitable for Farm or Draft Purposes, also one Bay Road Horse 4 yrs., sired by Online. Horses for all purposes at the right price. Quality considered. **STARKWEATHER STOCK FARM,**
Northville, Mich.

JACKS AND MULES

Raise mules and get rich. 230 head fine large Jacks, Jennys, and mules 14 to 17 hands high. Large registered Jacks and Draft Stallions, cheap now. Mules by the pair or carload. Stock guaranteed. Write for prices today. Address

KREKLER'S JACK FARM
West Elkton, Ohio.
Branch Barns, Clinton, Indiana.

CLYDESDALE We have a lot of choice young Stallions and Mares for sale at bargain prices. Terms to suit. **FINDLAY BROS., Fairgrove, Michigan.**

Registered Percherons,
BROOD MARES, FILLIES AND YOUNG STALLIONS at prices that will surprise you. **L. C. HUNT & CO., Eaton Rapids, Michigan.**

Pigeon Pony Farm—Reg. Shetland Ponies, mostly spots, 1 spotted stallion and young stock for sale. **Dr. W. T. Morrison, Pigeon, Mich.**

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 letter.

Cracked Heels.—I have a horse that has had a bad attack of cracked heels, and our Vet's prescription fails to do him much good. C. H. M., Traverse City, Mich.—Clip hair off and apply the following lotion two or three times a day: Dissolve 1 oz. acetate of lead, 6 drs. sulphate of zinc and 1 oz. of carbolic acid in a quart of water. Give horse ½ oz. of Donovan's solution of arsenic at a dose three times a day. The horse should be kept in a clean stable, and if used apply cotton and a bandage to legs as soon as he is brought in. But avoid washing legs as much as possible.

Foot Lameness.—My five-year-old mare went lame last winter following my driving her on hard road without shoes. One foot seems to grow longer and narrower than the other and is inclined to be feverish. J. H. B., Vassar, Mich.—The foot should be protected with a wide-webbed shoe and given considerable rolling motion. Clip hair off coronet and apply one part powdered cantharides and six parts lard every ten days. Apply lanolin to both fore hoofs daily.

Roarer.—I recently purchased a horse that snores every time I drive her. Also opens mouth and tongue turns purple; chokes besides, and is inclined to fall. F. E. S., Pellston, Mich.—Your horse is a confirmed roarer and a surgical operation upon the throat by a competent Vet. will perhaps make him well, but giving or applying drugs is only a waste of money.

Cows Eat Horse Manure.—My cows seem to be especially fond of eating horse manure in preference to well-cured fodder, and I would like to know the reason. J. G. H., Saginaw, W. S., Mich.—Your cows have not been fed a balanced ration. Feed them more green stuff and roots; also give them each 1 oz. of cooking soda and an ounce of ground gentian each at a dose in feed two or three times a day. One-half ounce doses of hypo-sulphite of soda is another very good remedy which should be given three times a day; however, you must keep in mind that the cause is in their food supply.

Weak Back—Spinal Paralysis.—I have a cow seven years old that is troubled with weak back and is unable to get up without assistance. Our local Vet. has treated her for hollow-horn, also split her tail near the tossel and he said the bone was gone, but he put some medicine in cut, bandaged tail and applied turpentine to her back. Also gave her several different kinds of medicine, but she fails to improve. On examining my other cows tails they all seem to be soft down near the tossel; therefore, I would like to know what to do for them. I have also noticed my cattle belching up gas. T. B., Hillman, Mich.—Leave the horns and tails of your cattle alone. Give your cow 1 dr. of ground nux vomica, ½ oz. of hypo-sulphite of soda, ½ oz. of ground gentian, ½ oz. of ground ginger at a dose in feed three times a day. Mix equal parts turpentine, aqua ammonia and raw linseed oil together and apply to back once every day or two. For your cattle that bloat, give each one ½ oz. of hypo-sulphite of soda at a dose in feed three times a day. A change of food supply and less exposure of your cattle to cold and storm the better.

Fevered Foot.—I have a horse that has a feverish fore foot, causing lameness; besides, the hoof shows rings of contraction. W. T., Waltz, Mich.—Clip hair off coronet and apply one part cantharides and five parts fresh lard every ten days. Applying moisture to hoof will do good; also apply lanolin to soften hoof every day or two.

Cow Gives Slimy Milk.—I have a cow that appears to be perfectly well and gives a good mess of milk and the milk appears all right until run through separator, when a slimy sort of substance is left in separator. E. A. H., Flushing, Mich.—Your cow may have been milked a considerable time since coming fresh; besides, milking utensils and separator may not be free from infection; or your milk may in some way become contaminated from external causes; or from hands

of milker, or from cow's udder. Give her ½ oz. of hypo-sulphite of soda and ½ oz. of ground gentian at a dose in feed three times a day. Clean and thoroughly ventilate your cow stable, and use sterilized linen garments to milk in.

Loss of Appetite.—Have cow which freshened two months ago that refuses to eat grain, but is inclined to eat rough fodder and she is growing real thin. B. M. C., Sherman, Mich.—Give your cow 1 dr. calomel and ½ oz. of bicarbonate of soda at a dose three times a week for three weeks. This will stimulate her liver into action. Also give her ½ oz. of ground ginger, 1 oz. of bicarbonate of soda, 1 oz. of ground gentian at a dose three times a day. Feed her some clover and roots.

Septic Infection.—I have a cow that calved three weeks ago; afterbirth did not come away for ten days; since then she has had poor appetite, but is not doing well. Her calf was alive at the time of birth, and is still living, but not doing well. C. J., East Jordan, Mich.—Give her a dessertspoonful of fluid extract cinchona, a dessertspoonful of fluid extract gentian and 2 ozs. of sulphate of soda at a dose in feed two or three times a day, or mix it with water and give as a drench.

Indigestion.—I bought a cow five weeks ago; since then I have never noticed her chewing her cud. She appears to have no appetite for roughage, but is inclined to eat corn, oats and potatoes. E. B., Bear Lake, Mich.—Ruminating animals that do not eat bulky, coarse fodder, do not require to remasticate their food; that is why you have not noticed her chewing her cud. Give her 1 dr. of ground nux vomica, ½ oz. hypo-sulphite of soda, ½ oz. of ground gentian at a dose three times a day, and if she does not take hold and eat fodder, give her ½ oz. of Fowler's solution at a dose three times a day in addition to the above mentioned remedy. First of all make an examination of her mouth; she may have tooth ailment, or a foreign body may be lodged in mouth which, when removed, she will be well.

Infected Wound.—The skin on pastern and fetlock of my horse cracked open last December; since then I have been unable to heal it. G. L., St. John's, Mich.—Give your horse ½ oz. of Fowler's solution at a dose three times a day and apply tincture of iodine to wound and surrounding parts once a day for a few days, then apply one part iodoform and five parts vaseline once a day.

Fevered Foot.—I have a horse that has a feverish foot, causing lameness; besides, the hoof shows rings of contraction. W. T., Waltz, Mich.—Clip hair off coronet and apply one part cantharides and five parts fresh lard every ten days. Applying moisture to hoof will do good, also apply lanolin to soften hoof every day or two.

Sluggish Kidney Action—Ringworm.—Have a 14-year-old horse that has trouble passing urine; besides, his water is muddy. I also have a steer that is troubled with ringworm and I have applied sulphur and lard, but it fails to effect a cure. L. R., Jackson, Mich.—Give your horse a dessertspoonful of powdered nitrate of potash at a dose in his feed two or three times a day for a day or two, then give this medicine as often as necessary to produce kidney action. Remember, his kidneys will act much better if he is exercised daily. Paint ringworm with tincture of iodine every two days, or apply one part iodine and 15 parts lard every day or two.

Enlarged Hock.—Last June one of my two-year-old colts became tangled in barb wire, cutting hock; wound was tedious in healing; now there is a fungus in wound, besides, the hock joint is enlarged, but it is not causing lameness. I would like to have the bunch removed. F. J. H., Empire, Mich.—Apply one part tincture iodine and two parts camphorated oil once a day. You will find it no easy task to reduce a bunch of this kind.

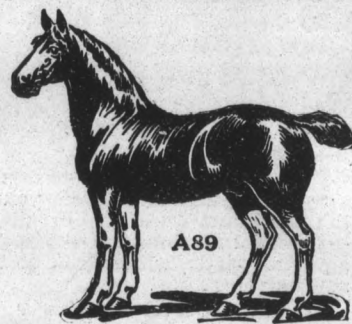
Horse went Blind Suddenly.—A couple of days ago I drove my 15-year-old horse about four miles when he went blind suddenly. Can he be cured? H. S., Brighton, Mich.—A small blood vessel breaking in brain, causing pressure on optic nerves, doubtless caused his loss of vision. Give 1 dr. of potassium iodide and ½ dr. fluid extract of nux vomica at a dose three times a day.

Cow Gives Bloody Milk.—I would like to know of a remedy that will cure a cow that gives bloody milk. This cow was all right for two months after she calved. G. C. F., Elsie, Mich.—Your cow has perhaps bruised udder. Bed her well, milk her with care, prevent other cattle from hooking her, or colts kicking her and avoid allowing her to step over fences or logs, or doorsills. Dissolve 1 oz. of acetate of lead in a quart of water, adding 4 ozs. of tincture arnica and apply to injured portion of udder two or three times a day.

Make Your Lame Horse Sound, Like This

You Can Do It While He Works.

We want to show you that there isn't any affection that causes lameness in horses that can't be cured, no matter of how long standing. We want to send you our instructive book, "Horse Sense" No. 3. We



also want to send you an expert's diagnosis of your horse's lameness free. Simply mark where swelling or lameness occurs on above picture and write us how it affects gait, how long lame and its age.

We absolutely guarantee Mack's \$1,000 Spavin Remedy to cure Spavin, Bone or Bog Spavin, Curb, Splint, Ringbone, Thoroughpin, Sprung Knee, Shoe Boli, Wind Puff, Weak, Sprained and Ruptured Tendons, Sweeney, Shoulder or Hip Lameness and every form of lameness. We have deposited \$1,000 in bank to back up our guarantee. Cures while he works. No scars, no blemish, no loss of hair.

P. B. Smith, Jamestown, Cal., says: "In regard to my sprained horse, am pleased to state that after using one bottle of Mack's \$1,000 Spavin Remedy, my 14-year old horse is entirely cured."

Your druggist will furnish Mack's \$1,000 Spavin Remedy. If he hasn't it in stock, write us. Price \$5 per bottle and worth it. Address, McKallor Drug Co., Binghamton, N. Y.



Don't borrow your neighbor's Farm Journal. She wants it herself.

Have one of your own. There are many things in the Farm Journal you will want to cut out and save. A scrap book made of Farm Journal Clippings or the volume bound, will become a priceless encyclopedia of the things you want to know. Send \$1 for a 5-year subscription. Nearly as cheap as borrowing.

The Farm Journal

182 Washington Square, Philadelphia

WHAT DO YOU KNOW ABOUT A HORSE'S FOOT?

There is an old true saying "NO FOOT, NO HORSE." After 20 years experience with the hoof and foot, our saying is NO FOOT, NO HORSE.

EVERY HOOF MUST BE KEPT GROWING.

THERE IS A REASON, YOU WILL FIND IT IN OUR BOOK "TRUTH IN A HOOF-SHELL"

EVERY HORSEOWNER AND CARETAKER SHOULD READ IT.

IT IS SENT FREE ON REQUEST BY

THE EVERIT COMPANY, Dept. E, Wellsville, N. Y.

BOOK ON DOG DISEASES And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER, V. S.
118 West 31st Street, New York

FOR SALE—Imported Belgian Stallion, coming 7 yrs. old. Wt. about 2000 lbs. Color, bright dapple bay, perfect in build, disposition, action, and is a stock getter, no better stallion in Mich. For particulars and price address Box 258, Coopersville, Mich.

SOUTH ST. PAUL HORSE & MULE COMPANY.
Union Stock Yards, South St. Paul, Minn.
A large assortment of Good Horses and Mules always on hand. **PRIVATE SALES DAILY.**
HORSE AUCTION EVERY MONDAY.
GET IN TOUCH WITH US.

SUFFOLK STALLIONS
FOR SALE. THE FARMER'S DRAFT HORSE. **PIEDMONT FARMS, - MARSHALL, VIRGINIA.**

PERCHERONS—Impotent, one of the heaviest horses in state, at head of stud. Brood Mares as good, young stock for sale. **CHAS. OSGOOD & SONS, Mendon, Michigan.**

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

FIVE REGISTERED PERCHERON STALLIONS, F blacks, from weanlings to 12 years old, and sound. **WM. McORODAN, Dutton, Kent Co., Mich.**

Registered Clydesdale Stallions for Sale.
F. A. PETZ, CAPAC, MICHIGAN.

Public Auction Sale.

Having sold my farm will sell at Public Auction my entire herd of Pure Bred Holstein Cattle, also 4 thoroughbred Berkshire Sows and 1 Boar, 20 Grade Sows, 8 Horses and Colts, 1 Percheron Stallion and Farm Implements.

The Cattle will be sold the 4th day of March at 10 A. M. The latter will be sold the 3rd day of March, on my farm 2 miles Northwest of Bath. Train will be met by rigs. Free Lunch.

LOUIS NELLER, PRO.
Auctioneer—Colonel Perry, Manager—Murry.

WANTED, STEERS & CALVES
for feeding. Send description and price to
BRISCOE FARM, R. F. D. 8, Pontiac, Mich.

BREEDERS' DIRECTORY.**CATTLE.****ABERDEEN-ANGUS**

HERD FOUNDED IN 1900.
Strains represented consist of Trojan, Ericas, Blackbirds and Prides, only. Black Quality too, a bull of rare individuality and merit, heads the herd.
WOODCOTE STOCK FARM, Ionia, Mich.

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

Four Pure Bred Angus Bulls. Extra good ones. One show bull. Eight and nine months old. Priced reasonable. Inquire F. J. WILBER, Clio, Mich.

Four Registered Aberdeen Angus Bulls, from ten to seventeen months old. Prices reasonable.
GEO. HATHAWAY & SON, Ovid, Michigan.

MILO D. CAMPBELL, OHAS. J. ANGEVINE

BEACH FARM GUERNSEYS**OUR HERD BULLS ARE:**

1st Rosett's Stranford of Ingleside No. 22533 with six dams that average 706 lbs. fat.
2nd Violet 3rd, son of Iowa No. 24107, with four dams that average 697 lbs. fat and three sires with over 90 A. R. Daughters, and his grand dam is champion three-year-old cow of all breeds.
3rd Horizon No. 23091 whose dam made 632 lbs. fat.

Bull calves from these Sires and A. R. Dams and also a few older Bulls for sale.

EVERY BULL GUARANTEED TO PLEASE.
CAMPBELL & ANGEVINE,
COLDWATER, MICHIGAN.

THE VILLAGE FARM, Grass Lake, Michigan, GUERNSEY CATTLE

Guernseys—Famous May Rose Strain. A select herd. Tub. Tested. Several A. R. O. Cows. J. K. Blatchford, Windermere Farm, Watervliet, Mich.

For Sale, Registered Guernsey Bull Extra quality. WINDYACRE FARM, Homer, Michigan.

FOR SALE—Splendid 3 month old Guernsey bull calf. Good breeding. Price reasonable. H. A. SCHROEDER, Ludington, Mich.

For Sale, Reg. Guernsey Bulls, Berkshire hogs, sow and gilts bred for spring farrow. Write JOHN EBELS, R. 10, Holland, Michigan.

FOR SALE—On account of the Federal quarantine preventing shipment outside the State, we have on hand a number of splendid young Guernsey bulls. A special opportunity both as to price and quality. Also registered Berkshire hogs. St. Ansel Farms, E. E. Lepelley, Supt., R. 3, Jackson, Mich.

HEREFORD; Three bull calves and one two year old. ALLEN BORS, Paw Paw, Michigan.

BIGELOW'S HOLSTEIN FARMS
at reasonable prices some fine young registered
Holstein Bulls
from 3 months to 15 months old, from A. R. O. Dams of high butter records.
Bigelow's Holstein Farms, Breedsville, Michigan

HATCH HERD, Ypsilanti, Michigan,

Registered Holstein Friesian Sires—Grandsons of the World's Greatest Dairy Sire. They are out of choice A. R. O. dams. Their sire is:
Half brother to the World's record cow 44.15 pounds in 7 days. Average record of 50 dams in his pedigree 31.25 lbs. in 7 days. Average per cent of fat three nearest dams 4.37. Sires in first three generations already have over 500 A. R. O. daughters. Prices reasonable so you can have the best.

Hereford Bulls for Sale—We offer a few yearling bulls and some Polled bull calves about seven months old. These are well bred, good animals and will be priced right. BEAVER LAKE RANCH CO., Alpena, Mich.

Do You Want A Bull? Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6 1/2 % fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

\$25 Delivered—Handsomeness thoroughbred Holstein Bull Calf. Not eligible to registry. By 24-pound butter bull, and heavy milking cow. A beauty. Half white. ROUGEMONT FARM S. Detroit, Michigan

A Holstein Bull that will do you good. A splendid son of the King Segis Pontiac Howell. A Brother to the \$50,000 bull. Write for extended pedigree. Reed & Knowles, Howell, Michigan.

Reg. Holstein Bull calves and Herd Bull. Can supply all wants in Reg. Chester Bay B. Farham, Bronson, Mich.

March 4 | Mumford's Duroc Sow Sale | March 4
Brookwater Farm, Ann Arbor, Mich.
49 Bred Sows and Gilts, 3 open Gilts and 4 Boars.

This is strictly a high class offering of choice Duroc Jerseys, rich in blood of Cherry King, Orion Chief, Defender others equally good. The sows are bred to or sired by prize-winning boars I Champion and 2 First Herd Boars. You cannot afford to miss it.

Send for our catalog and plan to spend March 4 profitably at Brookwater Farm, Ann Arbor, Mich., R. F. D. 7. **March 4**

Our Herd Sire Long Beach De Kol Korndyke

Has a \$20,000 Sire, a \$10,000 Dam, (year's record: Milk 21393; Butter, 1226 lbs., 50% fat.) She has a \$20,000 sire with 9-30 lb. daughters. She also has a \$10,000 dam, (year's record: Milk, 23682; Butter, 1088 lbs. Bull calves from \$100 up.)
F. S. KENFIELD, Proprietor.
LONG BEACH FARM, Augusta, Mich.

ESPANORE FARM, LANSING, MICHIGAN.

OFFERS FOR SALE A SPLENDID

Registered Holstein Bull Calf

A bargain for a quick sale
A few females for sale.

CHAS. S. OSBORN, } Owners.
ADAM E. FERGUSON, }

A Choice Holstein Bull Calf

From a 30 lb. bull, full brother in blood to the World's Champion Holstein, the World's Champion 4-yr.-old, and own brother to the 3d greatest cow. Dam an 18 lb. three year old.
HILLCREST FARM, Kalamazoo, Michigan.

Also some choice Big Type Poland China Fall pigs and Bourbon Red Turkeys.

DISPERSION SALE OF REGISTERED HOLSTEINS.
30-lb. cow, and 3 daughters; three 25-lb cows and daughters. Many other good ones. Farm is sold and all will be sold March 25th. Hobart W. Fay, Mason, Mich.

A "BARGAIN" "ONLY" \$50 Registered Holstein Bull Calf. Best blood and best A. R. O. backing on both sides. 3/4 black, Perfect and handsome individual. Rougemont Farms, Detroit, Mich.

High Class HOLSTEINS My herd is headed by Smithdale Alcarra Pontiac, whose is the famous Alcarra Polkadot. Have few young bulls and females for sale at reasonable prices. Will buy a few heifers about 15 months, not bred, Farm 1/4 mile from court house. SETH B. RUBERT, Howell, Mich.

FOR SALE—Fine 3 year old Holstein heifer bred grandson of Colantha Johanna Lad. Also beautiful bull calf.
GEO. D. CLARK, Vassar, Michigan.

10-Month Reg. Holstein Calf from a 20.50-lb. dam. She from dam with a 645 lb. butter record in 9 months, mostly white. Price \$125. DEWEY C. PIERSON, Hadley, Mich.

\$50 cash, balance note, gets H. P. bull calf. You will be proud of both breeding & individuality. When buying buy good ones. M. L. McLaughlin, Redford, Mich.

"Top-Notch" Holsteins.
Extra large fine young bull, 3/4 white, born Oct. 4, 1913. Dam has official record of 29.40 lbs. butter in 7 days, 117.50 lbs. in 30 days. Sire's dam is a 22.64 lb. 4-yr.-old daughter of a 30.59 lb. cow.
McPHERSON FARMS CO., Howell, Michigan.

HOLSTEINS FOR SALE

5 Good Bulls, ready for service.
10 Very Choice Bull Calves.
2 Two-year-old Heifers, bred.
1 Six-year-old grand-daughter of King Segis, due in December.

L. E. CONNELL, Fayette, Ohio.

FOR SALE Registered Holstein Bulls ready for service, and bull calves, also females.
FREEMAN J. FISHBEEK, Howell, Michigan.

Holstein-Friesian Breeder—The best families of the breed represented.
D. D. AITKEN, Flint, Michigan.

Holstein Bull Calf; Born Sept. 11. Splendid individual, well grown, nicely marked. His dam and sire's dam have A. R. O. records that average 7 days Butter 24.86 lbs. Milk 587.8 lbs. both as 4-yr.-olds. W. B. READER, Howell, Michigan.

MICHIGAN HOME AND TRAINING SCHOOL LAPEER, MICHIGAN
Breeder of High Grade Holstein Cattle. Lists and prices upon application.

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

JERSEYS—For list of stock for sale and Jersey facts write MRS. F. H. WALKER, R. R. No. 8, Kalamazoo, Mich. If a breeder and a member of M. J. C. C. send list of stock for sale to the above.

Lillie Colmston—Jersey Cattle, Yorkshire Hogs, Orford Sheep. Write for what you want. FARM OF LILLIE, Coopersville, Michigan.

THE WILDWOOD JERSEY HERD
Registered Jersey Cattle, rich, Majesties Wonder No. 30717, one of the best sons of Royal Majesty is at the head of herd. His sons show type and class and his daughters are producing a large flow of high testing milk. Write your wants, Alvin Balden, Capac, Mich.

MAPLE Lane Register of Merit Herd—Tuberculin tested by the U. S. Government. For sale, bulls, bull calves and heifer calves from E. of M. dams and grand-dams, and Hood Farm sire whose dam's and grand-dam's records average 812 lbs. of butter. Irvin Fox, Allegan, Mich.

FISHERTON FARM JERSEYS—Three fine grandsons of Hood Farm Paris 9th, from Register of Merit dams. FISHERTON FARM, Pontiac, Michigan.

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

FOR SALE, Registered Jersey Cows—fresh or to freshen soon.
WATERMAN & WATERMAN,
Meadowland Farm, Ann Arbor, Michigan.

\$138 a Cow per Year

is a late average of a Washington State Jersey herd. Many

Jersey
Cows have records of 500 to 1000 pounds of butter annually—a telling lesson to people who are struggling along with \$20 to \$30 cows. Investigate the Jerseys. Address

THE AMERICAN JERSEY CATTLE CLUB
324 W. 23d St., New York City

JERSEYS—YEARLING BULL READY FOR SERVICE. Also bull calves. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

LINE BRED JERSEY COWS AND HEIFERS. Fresh or due soon. Male calves eligible to registration. CHAS. B. COOK FARM, Owosso, Michigan.

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

BIDWELL SHORTHORNS
Registered Bulls For Sale.

Big and strong in prime condition for immediate use. 15 to 22 months old. Priced for quick sale. Albion Stamp 352670 by Ch. Shenhstone Albino, in service. Write or see them on farm at Lake Shore & Michigan Southern Depot, or five minutes walk from Detroit, Toledo & Ironton Depot.

BIDWELL STOCK FARM
Box D. Tecumseh, Michigan.

MILKING SHORTHORNS—Young bulls sired by a Grand May & Orie bull for sale. DAVIDSON & HALL, Tecumseh, Michigan.

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

Scotch Shorthorns of Beef Type—Bulls and females, to sell. L. C. SHEPARD, White Pigeon, Mich.

FOR SALE—Shorthorn Bulls, red and roans, by sons of Avondale and Victor Linwood, both International winners. John Schmidt, R. 2, Reed City, Mich.

Dairy Bred Shorthorns of Best Bates STRAIN. J. B. HUMMEL, Mason, Michigan.

SHORTHORNS: 6 CHOICE YOUNG BULLS FOR SALE
W. W. KNAPP, Howell, Michigan.

SHEEP.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS
"The Shepherds of the East."
I sell and ship everywhere and pay express charges. Write for club and price list. Oxford, Shropshires and Folded Dales. PARSONS, Grand Lodge, Mich. R. 1.

OXFORD-DOWN SHEEP, NO STOCK FOR SALE.
M. F. GANSSLEY, Lennon, Michigan.

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

Wool-Mutton Shropshire Ewes, ram. Cheap to close out stock quick. Mostly sired by imported ram. Write today. MAPLEWOOD STOCK FARM, Allegan, Mich.

HOGS.

Berkshire Hogs—Choice gilts bred to farrow in March and April. Also a number of Barred Plymouth Rock Cockerels. Chase's Stock Farm, R. No. 1, Mariette, Mich.

BERKSHIRES—Open or bred sows. Registered. \$30 for choice, all guaranteed. G. H. RIDER, Almont, Mich.

BERKSHIRES: Sows and Gilts Bred for April and May farrowing; of the best Breeding.
A. A. PATTULLO, Deckerville, Michigan.

HAMPSHIRE Swine—Breeding stock of all age from most popular strains. Write for breeding. Inspection invited. Floyd Myers, R. 2, Decatur, Ind.

Hampshire swine, some good boars for breeding and some fall pigs both sexes at right prices. West Wind Farm, Pontiac, Mich. E. P. Hammond, owner, N. A. Wiser, manager.

CHESTER WHITES. August and September pigs, from Cires as Chickasaw Bud, Modeler, Bronson King. A certificate of registry with each pig. John Gintling, Bronson, Michigan.

O. I. C. Fall Pigs—Choice gilts bred to one of the best boars in the State.
C. J. THOMPSON, Rockford, Michigan.

O. I. C's—STRICTLY BIG TYPE. For 12 yrs. I have been breeding for size and length with quality. Lengthy Prince one of the largest boars the breed ever produced. Heads our herd, assisted by White Monarch and Frosts Choice, 2nd prize under six months boar at Mo. Inter State Fair 1914. Stock for sale at all times. Prices reasonable. Address, NEWMAN'S STOCK FARM R. No. 1, Mariette, Mich.

O. I. C.—Spring boars all sold. We have some fine fall pigs ready to ship.
JOHN BERNER & SON, Grand Lodge, Michigan.

O. I. C's—One boar. Gilts bred for March and April farrow. Aug. and Sept. pigs. I pay express. G. P. ANDREAS, Dansville, Mich.

O. I. C's—I have extra fine lot of last spring boars and a lot of this fall pigs, either sex, not akin. 1/2 mile west of depot.
OTTO B. SCHULZE, Nashville, Michigan.

O. I. C. SWINE—Write for new price on hand service boars, also other sex of Aug. farrow. I am also booking orders for March and April Pigs.
A. J. GORDEN, R. No. 2, Dorr, Michigan.

O. I. C's, nothing for sale at present but will take orders for Mar. and Apr. pigs, pairs not akin, Reg. free and shipped on approval. J. W. Howell, Ovid, Mich.

O. I. C's—Good thrifty stock for sale at all times. Choice sows bred for spring farrow. TED DRAPER, Manly, 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." G. S. BENJAMIN, R. No. 10, Portland, Mich.

O. I. C.—25 sows bred for spring farrow. 75 Fall pigs, large and growthy. Write your wants. GLENWOOD STOCK FARM, Zeeland, Michigan.

O. I. C. Choice gilts bred for spring farrow. Sept. pigs serviceable boar weighing 550 lbs. price \$50. The long bodied and big boned kind. Alvin V. Hatt, Grass Lake, Mich.

Duroc Jerseys of the heavy boned type. Bred Sows and fall Pigs of both sex for sale. M. A. BRAY, Oakemos, Ingham Co., Michigan.

O. I. C's—Bred sows and gilts for spring farrow. Satisfaction guaranteed.
A. R. GRAHAM, FLINT, MICHIGAN.

O. I. C. Gilts bred for March and April farrow. September pigs ready to ship.
H. W. MANN, Dansville, Michigan.

O. I. C's—Two serviceable boars, sow coming two-yr.-old, bred for March farrow, fall pigs, all stock registered. S. J. HOWELL, St. Johns, Mich.

Duroc Jerseys: A few choice boars and bred gilts, Also S. C. W. Lehighs and Buff Rock Cockerels. J. MCNICOLL, Sta. A. R. No. 4, Bay City, Michigan.

Duroc Jerseys—A few choice gilts bred for April and May farrow. Fall pigs either sex. S. C. STAHLMAN, OCHERRY LAWN FARM, Shepherd, Michigan.

DUROC JERSEYS—Aug. and Sept pigs with plenty of size and great quality. Also gilts bred to prize winning stock. F. J. Drott, R. No. 1, Monroe, Mich.

DUROC GILTS—Bred to farrow in April and May, \$35 each. If my selection does not suit you return sow after inspection at my expense and get your money back. KOPE KON FARM, S. L. WING, PROPR, Kinderhook, Mich.

O.I.C. and Chester White Swine

50 Gilts bred for March and April farrow, bred to White Hall Jr., second prize aged boar Illinois State Fair, and Allen, Jr., Champion at Wis. State Fair, and to Jumbo and Wonder Boy. Here are a pair of big ones and are smooth. Special prices for the month of February. Service males and fall pigs of either sex. Write your wants and come and visit the greatest herd in state. All stock shipped c. o. d. and Reg. Free.

ROLLING VIEW STOCK FARM,
R. No. 2, Cass City, Mich.

DUROC JERSEYS—3 Spring boars and 25 bred gilts ready to ship.
CAREY U. EDMONDS, Hastings, Michigan.

SPECIAL on Durocs—I will sell 35 choicely bred sows, 5 boars, with all papers. Send for catalog. I will put you on mailing list. Sale March 17, 1915. Phone Volinia. H. G. Keesler, Cassopolis, Mich.

DUROC JERSEY—Bred gilts for March and April farrow; bred right and light.
W. C. TAYLOR, Milan, Michigan.

Duroc Jersey—March gilts bred to son of Volunteer, Champion 1912 fairs. Orders booked for March pigs. E. H. MORRIS, Monroe, Mich.

Capitol Herd Duroc Jersey Swine. Established 1883. Sept. pigs. Write for description, prices and etc. J. H. BANGHART, PROP., Lansing, Michigan.

DUROC JERSEYS—Spring pigs of either sex at reasonable prices. Pairs not akin.
W. J. BAUMAN, Burr Oak, Michigan.

POLAND CHINAS—60 head registered boars and sows; fine stock.
A. G. MEADE, Colby Ranch, Stanton, Michigan.

POLAND CHINAS of the big type. Boars ready for service. Sows bred for spring farrow. A. A. Wood & Son, Saline, Mich.

POLAND CHINAS—Choice gilts bred to "Big Type," boars of great quality; also young boars. L. W. BARNES & SON, Byron, Michigan.

Poland China Sows and Gilts bred for March and April farrow. Also fall pigs, satisfaction guaranteed. G. W. HOLTON, Kalamazoo, Mich.

LARGE TYPE P. C.—Either sex, pairs and trios, not bred gilts. W. J. HAGELSHAW, Augusta, Mich.

Large Strain P. C.—A few spring boars left, one litter of May boars combining the blood of Big esmoines 194417 and Giant Defender 194419, and gilts bred to Young Hadley and Big Defender that weighs 600 as yearling. H. O. SWARTZ, Schoolcraft, Michigan.

Big Type Poland China Boars and Gilts plenty of B size and great quality. I know I can please you. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

STRICTLY B. T. Polands—Absolutely none larger or better. My breeding represents best herds in U. S. Bred gilts and fall pigs at bargain prices. Satisfaction guaranteed. Frank D. Kruger, Ravenna, Mich.

POLAND CHINAS—The type that wins, weighs, Bred sows and pigs either sex. SPRING BROOK FARM, Three Oaks, Michigan.

HEAVY BONED POLAND CHINA SOWS, Bred fall pigs, both sexes, pairs not akin. Also older boars. Prices low. Robert Neve, Pierson, Mich.

Poland Chinas, either sex, all ages. Something good at a low price. Bargains in boars ready for service. P. D. LONG, R. F. D. 8, Grand Rapids, Mich.

THE FARMERS' HOG—Butler's Big Boned Prolific Poland Chinas grow big, keep easy, mature early, ready for market at 6 months. Why? Because we've bred them that way for more than 20 years. 50 big boned, long bodied, sows, also 100 fall pigs at farmers' prices. Buy one and make more money on your hogs. P. C. History Free. J. C. BUTLER, Portland, Mich.

IG Type boars by Big Smooth Jumbo. Greatest boar in State, 748 lbs. at 17 mo. These boars are long, tall, big bone, sold at farmers' prices, shipped C. O. D. Call or write. Wm. Waffie, Coldwater, Mich.

Large Type P. C.—Largest in Michigan. Bred Gilts, sired by and bred to the great boar, Big Desmoines No. 194417, weight 1035 lbs. at 31 months, and out of sows that weigh up to 700 lbs. Gilts of March and April farrow weigh from 250 to 325 lbs. Come and see. Expenses paid if not as represented. W. E. LIVINGSTON, Parma, Mich.

Mule Foots—Bred gilts, spring boars, fall pigs, pairs not akin. Older bred sows for spring farrow. C. F. BACON, Ridgeway, Michigan.

Mule Foot Hogs, both sexes, all ages. Satisfaction guaranteed. LONG BROS., Alvada, Ohio.

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

YORKSHIRES

Bred gilts; service boars, September and October pigs. Prices reasonable. W. C. COOK, R. 42, Ada, Mich.

OUR Big Factories Save You Money

Cut The Cost To

**You Can See the Goods Before You Pay—
Try Them 30 Days Before You Pay—**

I want to show you that you can buy a thousand different articles—all guaranteed—including Ready Roofing of all kinds—Metal Roofings—House Paints—Barn Paints—Buggies, Wagons, Harness—Fencing for every purpose—Incubators—Garden Tools—Farm Implements—Gasoline Engines—Cream Separators—and many other items for which you would likely pay **one-third or one-half more than we ask**, for our fully guaranteed factory products which we sell on the unusual plan outlined. I will positively ship any article listed in the United Factories Catalog to any responsible person, anywhere in the U. S.

No Money Down — No Deposit — No C. O. D.

You don't have to even make a bank deposit. Nothing like this offer was ever made before. My plan makes it entirely safe for every buyer who wants to save money. All chance of dissatisfaction, all risk, all expense, if no sale, is with us. You cannot lose one cent.

We don't handle thousands of little things, priced cheap, but which cost you in the long run more than you would have to pay at home for the same goods. But we can save you money, and give you the best of satisfaction, on the many lines we make, and we will let you see the articles you select before you pay—try them 30 days if you wish to do so. If you want to save money on a large number of items—the saving of which amounts to a real benefit—write today for our

Complete Factories Catalog
And These Special Money Saving
Catalog Folders—All FREE

Write for This
Money Saving
Book
Today

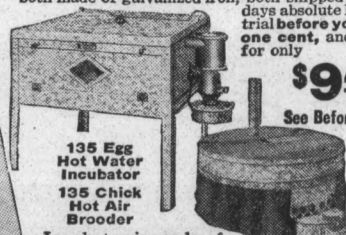
GEO. A. BOTTGER,
President of The United Factories Company and originator of the plan to let you See and Try the goods Before You Pay.

LOOK!
The Best
INCUBATOR
Bargain Ever Offered

Here is, without doubt, the biggest Incubator and Brooder bargain ever offered. Think of it, a 135 Egg Hot Water Incubator and 135 Chick Hot Air Brooder, both made of galvanized iron, both shipped on 30 days absolute FREE trial before you pay one cent, and both for only

\$9.45

See Before You Pay



Incubator is made of wood, then covered with galvanized iron, has three walls, deep egg tray and nursery, copper tank and boiler, thermostat, egg tester and thermometer. Brooder has ventilator, best hot air heat, warm hover curtain. Greatest outfit on the market at the price. Both \$9.45. See and Try 30 Days Before You Pay. Write for Free Catalog giving full description of this wonderful bargain.

Will Ship You Any Article
shown in This Book Direct from
Our Factories Without a Penny
of Pay in Advance and Let You
SEE and TRY The Goods
30 Days Before You Pay

THE UNITED FACTORIES CO.
CLEVELAND, O.

**CREAM
SEPARATOR**
\$19.85 For
Unito No. 2

Exactly like illustration
A full size 200 lb. capacity machine. Easy to clean, easy to run and a marvel in skimming efficiency. Has indestructible steel milk supply tank, open easily cleaned milk and cream spouts, bearings bathed in oil. Runs quietly—Guaranteed a Life-Time—against defects in material and workmanship. We also make three larger sizes all sold at similar low prices. Let us send you one on our liberal try before you pay plan. Write for catalog.



See It
Before You Buy
Unito Harness
\$10.98



Don't buy a harness till you have tried the famous Unito make. If satisfied only \$10.98 for this single strap, breast collar buggy harness. It is a wonder for the money. See catalog for full line of harnesses.

\$27.75 For 1 1/2 H.P.
Made in Sizes
1 1/2 to 15 H.P.



**TRY THIS ENGINE
30 DAYS FREE**
Keep It If Pleased

Only \$27.75 for 1 1/2 h.p. water-cooled Unito Engine, guaranteed a lifetime. Larger sizes proportionately low in price. Quick, easy starting, smooth, powerful and economical.

GEO. A. BOTTGER, Pres.

THE UNITED FACTORIES COMPANY
224 United Factories Bldg., Cleveland, Ohio

Dear Sir:—Please send me without cost, your big Catalog and Special Offers, which explains 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.

- | | |
|---|---|
| <input type="checkbox"/> UNITO Paints | <input type="checkbox"/> UNITO Incubators |
| <input type="checkbox"/> UNITO Ready Roofing | <input type="checkbox"/> UNITO Farm Implements |
| <input type="checkbox"/> UNITO Wall Board | <input type="checkbox"/> UNITO Cream Separators |
| <input type="checkbox"/> UNITO Excell Metal Roofing | <input type="checkbox"/> UNITO Fence |
| <input type="checkbox"/> UNITO Gasoline Engines | <input type="checkbox"/> UNITO Vehicles |
| <input type="checkbox"/> UNITO Harness | <input type="checkbox"/> UNITO Electric Light Outfits |
| <input type="checkbox"/> UNITO Power Washers | <input type="checkbox"/> UNITO Sewing Machines |
| <input type="checkbox"/> UNITO Stoves and Ranges | |

Name.....
Town..... County.....
R.F.D..... State.....

Don't Miss This
BIG SPRING ROOFING SALE

78¢
A Roll

Buys our high-grade tested Two-in-One Brand Ready Roofing. This roofing is made of long fibre wool felt, thoroughly saturated with pure mineral asphalt—not mixed with tar or oil. Stays firm and hard under sun or rain. Has rubber finish on one side and sanded on the other. This is a big bargain in Ready Roofing as you can tell when you see the samples. Others ask 90¢ to \$1.25 for similar quality. We also quote exceptional prices on Granite Coat, Double Flint Coat, Asphalt Shingles and Shingle Effect Roofing. Our famous Diamond Coat Roofing is

Guaranteed for 20 Years

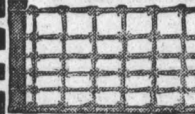
State kind of roofing you want to put on and we will not only send you samples, free, postpaid, but we will ship your roofing without a penny down—let you see and try it before you pay.

Write for the Free Samples Today

**PRICES DOWN
— ON —
METAL ROOFING**

All brand new Excell stock, "no wrecked" goods—no "seconds"—Every sheet guaranteed even

FENCING



We quote only dependable fencing of best quality. Guaranteed.
11¢ a Rod and up

Stay wires are strong, top and bottom wires extra heavy. Double galvanized—cannot rust. We can supply just the kind of fencing or gates you need. Write for the catalog.

gauge, full weight and absolutely free from pits and flaws. Galvanizing done after sheets are squared, so there are no raw edges to rust. Why take chances on getting a job lot of unknown metal roofing when you can roof your buildings with genuine Excell Brand at prices which are amazingly low, quality considered, especially when you can see and try the goods before you pay. Write today for latest quotations.



Paint
This Spring
Save Money!
Prices were never before as low on Guaranteed Unito House Paint. Let us ship what you need without pay in advance.

Use One-Fifth—at our risk

—if it don't spread better, go farther, look as well as any paint that retails for \$2 to \$2.50 a gallon, return what is left at our expense and we will make no charge for any of it. We guarantee Unito House Paint at \$1.20 a gallon to outwear any lead and oil job and not to crack, peel or blister. **65¢ A GAL.** Good quality Barn Paint, only

Buggy Prices SMASHED

Think of buying a guaranteed buggy—one that looks right, built to stand wear.



Take any UNITO buggy, drive it 30 days before you pay—prove its worth and value—then save \$25 to \$35. All we ask is that you give our UNITO buggy a test. Get our catalog and pick out the one you want. If it don't satisfy you in looks, build, material and workmanship—if it don't save you money—send it back at our expense. Ten crackjack new styles to select from.

Fill out the coupon and mark an "X" before the articles in which you are interested, or if you prefer, just drop us a postal mentioning articles in which you are interested. **WRITE TODAY.**

THE UNITED FACTORIES CO. 224 Factories Building
CLEVELAND, OHIO